PB-230 736

POLLUTION OF THE INTERSTATE WATERS OF THE POTOMAC RIVER AND ITS TRIBUTARIES-(WASHINGTON METROPOLITAN AREA)-DISTRICT OF COLUMBIA-MARYLAND-VIRGINIA. PROCEEDINGS OF PROGRESS EVALUATION MEETING HELD AT WASHINGTON, D.C. ON NOVEMBER 6-7, 1969

Federal Water Pollution Control Administration
Washington, D.C.

1969

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Progress Meeting

Potomac River - Washington Metropolitan Area Enforcement Conference

Statler Hilton Hotel, Washington, D. C.
November 6, 1969
10:00 a.m.

DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

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Progress Meeting
Potomac River - Washington Metropolitan Area Enforcement Conference

Statler Hilton Hotel, Washington, D. C.

November 6, 1969

10:00 a.m.

BEFORE:

Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior.

CONFEREES:

Paul W. McKee, Director, Maryland Department of Water Resources

W. McLean Bingley, Chief, Sanitary Engineering, Division of Water & Sewerage, Maryland State Department of Health

A. H. Paessler, Executive Secretary, Virginia State Water Control Board

Eugene T. Jensen, Regional Director, Middle Atlantic Region, FWPCA

Malcolm Hope, Associate Director, D. C. Office of Environmental Health

Norman E. Jackson, Director, D. C. Department of Sanitary Engineering

Carl J. Johnson, Executive Director, Interstate Commission on Potomac River Basin

PARTICIPANTS:

Hon. David D. Dominick, Commissioner, Federal Water Pollution Control Administration, United States Department of the Interior, Washington, D. C.

Johan A. Aalto, Director, Chesapeake Technical Support Laboratory, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, Charlottesville, Virginia

William M. Colony, Director, Planning and Evaluation Office, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, Charlottesville, Virginia

Dr. John J. Lentz, Director of Health and Environmental Protection, Metropolitan Washington Council of Governments, Washington, D. C.

J. W. Dixon, Consultant, Water Resources and Regional Economic Development, 4651 - 24th Street, North, Arlington, Virginia

Dr. Arno Viehoever, Consulting Bio-Chemical Engineer, 11001 Mariner Drive, Oxon Hill, Maryland

Robert W. Straus, Accokeek Foundation, 525 School Street, S. W., Washington, D. C.

Russel H. Wyer, Chief, Technical Investigation Branch, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, Charlottesville, Virginia

David O. Karraker, Assistant to Regional Director, National Park Service, 1100 Ohio Drive, S. W., Washington, D. C.

L. W. Cadwallader, Vice President, Potomac Electric Power Company, 929 E Street, N. W., Washington, D. C.

PARTICIPANTS (Continued):

Julian C. Holmes, 8062 Thorne Drive, Oxon Hill, Maryland

F. R. Blaisdell, Deputy Regional Director, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, Charlottesville, Virginia

James B. Coulter, Deputy Commissioner, State of Maryland Department of Natural Resources

LIST OF ATTENDANCE:

David J. Allee, Economist, Secretary of the Army, 3014 - 45th Street, N.W., Washington, D. C.

Robert K. Beacom, Operations Analyst, Hq. USAF, 10606 Borman Avenue, Fairfax, Virginia

Michael A. Bellanca, Assistant Director, Enforcement Division, Virginia Water Control Board, 4010 W. Broad Street, Richmond, Virginia

W. McLean Bingley, Chief, Division of Water and Sewerage, Maryland State Department of Health, 2305 N. Charles Street, Baltimore, Maryland

George Anthony Borun, Culligan, Incorporated, 440 McLean Boulevard, Elgin, Illinois

James D. Bowyer, Public Information Officer, Federal Water Pollution Control Administration, Department of the Interior, Charlottesville, Virginia

LIST OF ATTENDANCE (Continued):

Thomas T. Bradshaw, Editorial Assistant, Chemical & Engineering News, 1155 - 16th Street, N. W., Washington, D. C.

Larry Breakiron, Thomas Jefferson High School, Water Pollution Committee, 6283 Edsall Road, Alexandria, Virginia

John V. Brink, Chief, Bureau of Public Health Engineering, District of Columbia Department of Public Health, 801 North Capitol Street, N. E., Washington, D. C.

Dennis Brion, Engineering Assistant, Federal Water Pollution Control Administration, Middle Atlantic Region, Department of the Interior, Charlottesville, Virginia

A. T. Brust, Public Relations Manager, Fine Papers Division, Westvaco Corporation, Luke, Maryland

Stephan E. Butterworth, Urban Trainee, National Park Service, 1100 Ohio Drive, S. W., Washington, D. C.

James A. Byrum, Jr., Ens., U. S. Coast Guard, U.S.C.G. Group, U.S.C.G. Yard, Building 70, Baltimore, Maryland

George Carley, Assistant Executive Director, Interstate Commission on the Potomac River Basin, 1025 Vermont Avenue, Washington, D. C.

Leslie Carothers, Legislative Assistant, Congressman Gilbert Gude, 226 Cannon House Office Building, Washington, D. C.

James D. Clise, Chief, Division of General Sanitation, Maryland State Department of Health, 2305 N. Charles Street, Baltimore, Maryland

LIST OF ATTENDANCE (Continued):

Grover W. Cook, Chief, Enforcement Branch, Federal Water Pollution Control Administration, Middle Atlantic Region, Department of the Interior, 918 Emmet Street, Charlottesville, Virginia

Lawrence S. Costello, Deputy Manager, Eastern Region, Water Resources Engineers, Inc., 6120 Brandon Avenue, Springfield, Virginia

John P. Coyne, Director, TV & Radio, Jay Reich Adv., Pittsburgh, Pennsylvania

Monta Lee Dakin, Jefferson High School, Fairfax County, 6291 Edsall Road, Alexandria, Virginia

Stanley E. Degler, Assistant Planning Officer, The Bureau of National Affairs, Inc., 1231 - 25th Street, N. W., Washington, D. C.

Bernard W. Dahl, Research Assistant, Program Planning & Review, D. C. Sanitary Engineering Department, 415 - 12th Street, N. W., Washington, D. C.

Mrs. Betty Dooley, Research Assistant, Robert Blum & Associates, 815 Connecticut Avenue, N. W., Room 516, Washington, D. C.

D. Donnell Doak, NBC News, Washington, D. C.

Kenneth J. Dunn, Staff Mechanical Engineer, HQ Command, U.S.A.F. (DEE) Bolling Air Force Base, Washington, D. C.

Richard John Durgin, Division Engineer, City of Alexadnria, PO Box 178, Alexandria, Virginia

Robert F. Eagen, Jr., Public Health Engineer, Maryland State Department of Health, 2305 N. Charles Street, Baltimore, Maryland

LIST OF ATTENDANCE (Continued):

Ann Elgin, Air/Water Pollution Report, 1101 Spring Street, Silver Spring, Maryland

Donald L. Elmore, Sanitarian, Prince George's County Health Department, Cheverly, Maryland

Bernard Gross, Northern Virginia Planning District Commission, 6316 Castle Place, Falls Church, Virginia

Charles E. Gross, Public Health Engineer, Maryland State Department of Health, 2305 N. Charles Street, Baltimore, Maryland

A. W. Hadder, Virginia Water Control Board, 4010 West Broad Street, Richmond, Virginia

Philip B. Hall, Director of Public Works, City of Alexandria, City Hall, Alexandria, Virginia

James J. Hanks, Associate, Resources Development Associates, 1660 L Street, N. W., Washington, D. C.

Jerome Healey, Staff Engineer, U. S. Department of Health, Education, and Welfare, Bureau of Water Hygiene, 12720 Twinbrook Parkway, Rockville, Maryland

Foster de la Houssaye, Congressional Staff of Don Riegle, Congressman, Michigan, Room 1408, Longworth Building, Washington, D. C.

Eugene T. Jensen, Regional Director, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, 918 Emmet Street, Charlottesville, Virginia

Carl J. Johnson, Executive Director, Interstate Commission on the Potomac, 1025 Vermont Avenue, Washington, D. C.

LIST OF ATTENDANCE (Continued):

Allan R. Jones, Legislative Assistant to Senator William B. Spong, Jr., 5327 New Senate Office Building, Washington, D. C.

Kenneth M. Karch, Assistant Director, Health and Environmental Protection, Metropolitan Washington Council of Governments, 1225 Connecticut Avenue, N. W., Washington, D. C.

Donald B. Knudson, Chief, Sanitary Section, Engineering Division Milcoast, D. A. Corps of Engineers, 2433 N. Rockingham Street, Arlington, Virginia

Claudia D. Levy, Reporter, Washington Post, 1515 L Street, N. W., Washington, D. C.

Floyd R. Logsdon, 404 S. Adams Street, Arlington, Virginia

Norman D. Lowery, Sanitarian, Prince George's County Health Department, Cheverly, Maryland

Tim McDuffie, Congressional Staff, Congressman Don Riegle, 11723 Parmelee, Los Angeles, California

Edward F. McGinnis, Vice President, Underwater Storage, Inc., 1028 Connecticut Avenue, Washington, D. C.

Hester P. McNulty, Chairman, Potomac Basin Inter-League Committee, League of Women Voters, 7528 Little John Court, Falls Church, Virginia

Major William E. Mabson, Bioenvironmental Engineer, HQ USAF (AFMSSPAP), Forrestal Building, Washington, D. C.

Alfred Machis, Deputy Chief Engineer, Washington Suburban Sanitary Commission, Hyattsville, Maryland

LIST OF ATTENDANCE (Continued):

Robert D. Marteil, 3241 Pennsylvania Avenue, N. W., Washington, D. C.

Edward K. Miller, Special Reporter, Potomac Edison Company, Hagerstown, Maryland

Charles Mooshian, Public Information Specialist, D. C. Department of Public Health, 1875 Connecticut Avenue, N. W., Washington, D. C.

Harold "Bud" Morrison, Sales Manager, Colligan-Grove, 1619 Columbia Avenue, Lancaster, Pennsylvania

A. P. Norwood, Supervisory Sanitary Engineer, Department of the Army, Chief of Engineers, Room 2012, Building T-7, Washington, D. C.

Hecktor W. Ocker, Sanitary Engineer, Andrews Air Force Base, Washington, D. C.

Roy L. Orndorff, Executive Secretary, Potomac River Basin Advisory Committee, Suite 1104, 1025 Vermont Avenue, Washington, D. C.

A. H. Paessler, Executive Secretary, Virginia Water Control Board, 4010 W. Broad Street, Richmond, Virginia

David A. Parker, Engineer, Potomac Sand and Gravel Company, 3020 K Street, N. W., Washington, D. C.

J. Kelly Paull, Director of Operations, County of Fairfax, 4000 Chain Bridge Road, Fairfax, Virginia

Pollution Committee representing Jefferson Honors Program, Environmental Pollution Control Committee, Seminar on Contemporary Civilization, Honoras Program, Jefferson High School, 6529 Braddock Road, Alexandria, Virginia

LIST OF ATTENDANCE (Continued):

James A. Richardson, Park Naturalist, National Park Service, 1100 Ohio Drive, Washington, D. C.

John E. Riley, Assistant to Vice President, Melpar Division American Standard, 7700 Arlington Boulevard, Falls Church, Virginia

Jim Roadcap, Virginia Water Control Board, 4010 W. Broad Street, Richmond, Virginia

A. E. Robinson, Corps of Engineers, Baltimore District, P. O. Box 1715, Baltimore, Maryland

A. T. Roby, Chief, Engineering Operations, Fairfax County Government, Fairfax, Virginia

Captain Donald J. Rogers, Executive Secretary, DOD EPCC, Department of Defense, Forrestal Building, Room 6B227, HQ, USAF, Washington, D. C.

Robert B. Samworth, Chief, Grants, Research, and Statistics, D. C. Government, Department of Sanitary Engineering, 415 - 12th Street, N. W., Washington, D. C.

Edith Ray Saul, Water Resources Chairman, League of Women Voters of D. C., 3632 Prospect Street, N. W., Washington, D. C.

Melvin Leon Schick, Chemist, GSA Region 3, 7th and D Streets, S. W., Washington, D. C.

S. W. Shafer, Engineer Director, Alexandria Sanitation Authority, 835 So. Payne Street, P. O. Box 1283, Alexandria, Virginia

L. Shearman, 1830 Columbia Pike, Arlington, Virginia

Andy Sidio, Director, NFIC, Federal Water Pollution Control Administration, Cincinnati, Ohio

LIST OF ATTENDANCE (Continued):

Arnold Speiser, Chief, Water Quality Control Division, D. C. Department of Public Health, 801 N. Capitol Street, N. W., Washington, D. C.

Philip N. Storrs, Vice President, Engineering Science, Inc., Suite 503 Watergate Office Building, 2500 Virginia Avenue, N. W., Washington, D. C.

Ken Tinsley, Chief, Surveillance Branch, Federal Water Pollution Control Administration, 918 Emmet Street, Charlottesville, Virginia

Dick Watkins, Federal Activities Branch, Federal Water Pollution Control Administration, 918 Emmet Street, Charlottesville, Virginia

Dan M. Watt, Chief, Washington Aqueduct Division, U. S. Army Engineer District, Baltimore, 5900 MacArthur Boulevard, Washington, D. C.

Leon W. Weinberger, Vice President, Zurn Environmental Engineers, 2600 Virginia Avenue, N. W., Washington, D. C.

Carl Zillig, Head, Sanitary Engineering Section, Naval Facilities Engineering Command, Washington, D. C.

Stephen M. Zettel, Thomas Jefferson High School, SICC Government Class, 5527 Sheldon Drive, Alexandria, Virginia

Clem L. Zinger, Administrative Assistant, Potomac Basin Center, 1250 Connecticut Avenue, N. W., Washington, D. C.

J. T. Young, LCDR USN, Office of the Chief of Naval Operations, OP 442, Washington, D. C.

G. M. Carbaugh, Director, Virginia Soil & Water Conservation Commission, 203 N. Governor Street, Richmond, Virginia

LIST OF ATTENDANCE (Continued):

Charles R. Hall, Maryland Department of Water Resources, State Office Building, Annapolis, Maryland

Roberta Hornig, Reporter, Washington Star, Washington, D. C.

Stephen Megregian, V. P. Water Resources, Environmental Development, 1246 Taylor Street, N. W., Washington, D. C.

Charles D. Owens, President, Enviresearch, 4949 Old Georgetown Road, Bethesda, Maryland

Ted Rogowski, Associate Solicitor, Office of Assistant Secretary for Water Quality and Research, Main Interior Department Building, Washington, D. C.

Harvey L. Segal, Civil Engineer, HQ USAF (AFOCEKD), Bolling Air Force Base, Building 626, Washington, D. C.

Bernard J. Wachter, Assistant to the President, Water Pollution Research and Applications, Inc., 1725 DeSales Street, N. W., Washington, D. C.

O. B. Burns, Jr., Water and Air Conservation Administrator, Westvaco Corporation, 299 Park Avenue, New York, New York

Margo C. Jansohn, Reporter, Prince Georges Sentinel, 1900 Trafalgar Drive, Friendly, Maryland

Robert T. Keen, Enviresearch Corporation, 4949 Old Georgetown Road, Bethesda, Maryland

Peggy A. Masterson, Student, G. W. University, 4351 Sixteenth Street, N. E., Washington, D. C.

LIST OF ATTENDANCE (Continued):

Marilyn Withers, 8707 Tioga Road, Oxon Hill, Maryland

Robert M. Barnes, Washington Rep., White Motor Corp., Suite 812, 1625 Eye Street, N. W., Washington, D. C.

Judson C. Franch, Conservation Chairman, Maryland Environmental Trust, Montgomery City Commission, 1207 Azalea Drive, Rockville, Maryland

Jonas V. Morris, Morris Associates, 2233 Wisconsin Avenue, N. W., Washington, D. C.

Reinhold W. Thieme, Deputy Assistant Secretary for Water Quality and Research, United States Department of the Interior, Washington, D. C.

William H. Cary, P. E., 9607 Glencrest Lane, Kensington, Maryland

PROCEEDINGS

OPENING STATEMENT
BY
MR. MURRAY STEIN

MR. STEIN: The meeting is open.

This progress meeting is being held in connection with the Federal Enforcement Conference in the matter of pollution of the interstate waters of the Potomac River and its tributaries - Washington metropolitan area, in the States of Maryland and Virginia, and the District of Columbia, and is being held under the provisions of Section 10 of the Federal Water Pollution Control Act.

Conference sessions were held on April 2, 3 and 4, and May 8, 1969. We had agreed at that time to have a progress meeting at this time.

We have laid out a very extensive remedial program for this area designed to clean up the waters of the Potomac River for the maximum number of uses, and we are here, as advertised, to appraise what progress is being made.

We are indeed privileged today, and I think this is an indication of the priority that the Federal Government places on this particular problem of the Potomac River, to have with us the Commissioner of the Federal Water Pollution Control Administration, the Honorable David D. Dominick, who will make the opening remarks.

Mr. Dominick.

OPENING STATEMENT
BY
HONORABLE DAVID D. DOMINICK
COMMISSIONER
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
UNITED STATES DEPARTMENT OF THE INTERIOR
WASHINGTON, D. C.

MR. DOMINICK: Thank you, Mr. Chairman.

As Mr. Stein has said, we are here today at this progress evaluation meeting to determine the measure of progress that has been made to clean up the Potomac River since the last enforcement conference session held in April of this year.

I think that we will find that progress has been made.

As you know, we have had three primary targets in mind in our fight against the filth and dirt that have degraded the historic Potomac River for so many years. These targets are:

1. Eliminate the health hazard posed by the polluted river.

2. Eliminate the sight and odor nuisance created by the polluted water.

3. Improve the river water as a habitat for game fish.

My prepared remarks here say we have turned the corner in our efforts to restore the Potomac. That is a cliché, and I have taken off the nasty connotations in today's political rhetoric. Let's not use that; let's just say simply that we have in the past six months put together a vigorous action program--an action program that has enjoyed good leadership at the State, interstate, city and Federal levels, and that action program is showing substantial results. We have definitive evidence of substantial improvements in the Potomac.

In fact, the quality of Potomac water in the Washington area today is better, from a bacteriological point of view, than it was when Teddy Roosevelt was in the White House.

But still we certainly have a long way to go before we can transform the Potomac River into a symbol of national pride instead of a symbol of national disgrace.

Hon. D. D. Dominick

Following the April 2-4 meeting of the Potomac Enforcement Conference, Federal, State and local officals, all of whom are here today, on May 8 recommended a program to control and abate pollution in the Potomac River. Some of the major recommendations were:

1. Treatment plants in the Washington area were to provide for removal of at least 96 percent of the organics from wastewater 96 percent of the phosphates and 85 percent of the nitrogen.

2. All treated waters discharged into the Potomac in the Washington area were to be disinfected, starting immediately.

3. Adequate treatment facilities should be completed by industries within specific, assigned time schedules.

There were a number of other recommendations, which I am sure will be discussed during the course of this two-day meeting.

It was agreed at the April meeting that public progress meetings would be held in May and November of each year. This is why, as I pointed out earlier, we are here today.

The Federal Water Pollution Control Administration is working with State, interstate, and local agencies, to achieve one goal in the Washington area -- a clean Potomac

River.

But I must emphasize that Government agencies will fall short of this goal without the continued support of the public -- individuals and citizen groups.

The people of the Washington area must not for one moment ease the pressures that you have been applying to Government agencies and to industry. This must go on if we are to receive good administrative action, good legislative action, and proper funding.

Keep encouraging and prodding all of us who are charged with cleaning up the Potomac.

This way we will reach our common goal, and I think this is a most positive and optimistic outlook which we are going to achieve from this two-day meeting.

I think we are well on our way.

Thank you very much.

MR. STEIN: Thank you very much for those encouraging remarks, Commissioner Dominick.

For the staff of the Federal Water Pollution Control Agency, I would like to say that we have had the most complete support on this clean-up program from Commissioner Dominick and Assistant Secretary Klein, and in no small measure, their leadership has been responsible for our coming this far, holding this meeting, and getting the work prepared in the way that I think we will show the work has been prepared.

I would like the conferees now to introduce themselves. Let's start at my left with Mr. Hope.

MR. HOPE: I am Malcolm Hope, the Associate Director of Environmental Health in the D. C. Department of Public Health.

MR. JACKSON: I am Norman Jackson, Director of Sanitary Engineering, District of Columbia.

MR. PAESSLER: I am A. H. Paessler, Executive Secretary of the Virginia State Water Control Board.

MR. STEIN: Will you start on the right, please?

MR. BINGLEY: I am W. McLean Bingley, Chief of the Division of Water and Sewerage, Maryland State Department of Health.

MR. McKEE: Paul McKee, Director of Maryland Department of Water Resources.

MR. JOHNSON: I am Carl Johnson, the Executive Director of the Interstate Commission on the Potomac River Basin.

MR. JENSEN: And I am Gene Jensen, Regional Director, Middle Atlantic Region, FWPCA.

MR. STEIN: I am Murray Stein, Federal Water Pollution Control Administration, Department of the Interior.

We are going this morning and this afternoon and probably through tomorrow to go down our recommendations derived at the last session of the conference, one by one, and receive detailed reports on these, so that the conferees can make an evaluation of progress.

I will just read to you the topics of the agenda in the order we intend to take these up.

Nos. 1 and 2 will be time schedules for sewage treatment, including chlorination and disinfection. Then industrial waste treatment; heated water effects; future needs study; combined sewers and stormwater; Piscataway Sewage Treatment Plant; septic tanks; soil erosion; debris cleaning; oil survey report; anti-litter program; and then we will have a Surveillance Committee report. Then we will go into watercraft pollution regulations. We will then hear from the INCOPOT on their next public meeting on the upper basin. We will have an executive session, and then a conference statement.

All those who wish to participate in the meeting should make their wishes known to our National Conference Coordinator, Mrs. Rheta Piere -- will you stand up, Mrs. Piere -- while the first part of this meeting is in session, and we will try to schedule you.

If you have a statement on any particular one of these agenda items, please indicate that, so that we can hear you at the appropriate time. But if you put yourself down for any of these agenda items, we are going to ask you to restrict your remarks at that time to the item that you put yourself down for.

If you just want to make general remarks, don't put anything on your request, and we will schedule you accordingly.

With that, we will move into the first item of the agenda, and that deals with time schedules for sewage treatment, and we will call on the District of Columbia.

I would suggest that anyone other than the conferees making a statement come up to the lectern and identify themselves.

MR. JENSEN: Mr. Chairman, we have one previous item, a resumé.

MR. STEIN: Yes. Let's hold that for a moment and call upon the FWPCA for a water quality report.

Mr. Jensen.

MR. JENSEN: Mr. Chairman, we do have a brief statement prepared which summarizes the changes which have taken place in the Potomac during the intervening six months. Our report will be presented by Mr. Johan Aalto, Director of our Chesapeake Technical Support Laboratory, the field operations unit for our Middle Atlantic Region.

Copies of this summary are also being distributed.

STATEMENT BY

MR. JOHAN A. AALTO

CHIEF, CHESAPEAKE TECHNICAL SUPPORT LABORATORY

MIDDLE ATLANTIC REGION

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF THE INTERIOR

MR. AALTO: Mr. Chairman, Conferees, Ladies and Gentlemen:

I have been asked to report on the continuing water quality investigations by FWPCA and to present the current status of waste treatment at the major Federal installations located within the metropolitan Washington area.

The water quality investigations that have been made since the last meeting have been supported considerably by the Corps of Engineers laboratory at the Dalecarlia water treatment plant, and by the District of Columbia Department of Sanitary Engineering. They have provided information which we were able to add to our own information to evaluate current water quality conditions, and to project the downstream effects by the use of mathematical modeling techniques.

The detailed results of these efforts are discussed in the report which we have prepared, and which is being circulated now. This is the FWPCA Technical Report No. 27,

J. A. Aalto

entitled "Water Quality and Wastewater Loadings, Upper Potomac Estuary, During 1969."

Some of the findings discussed in the report. and this is a summary of it, include:

1. A comparison of the fecal coliform data collected during the summers of 1968 and 1969 indicates a significant decrease in bacterial densities in the vicinity of the Woodrow Wilson Bridge, where the major waste treatment plants of the area discharge. This we can attribute to the more effective chlorination practices that have been instituted by the area treatment plants.

Since the report was prepared, we have had confirmation of this. Results of bacterial analyses by the Department of Sanitary Engineering of the District of Columbia have confirmed this, and it is more than significant; it is a substantial decrease in coliform counts.

2. The high river discharges that we have experienced in August did not appreciably affect the low dissolved oxygen problems which we normally have found in the upper estuary. There were concentrations of less than 2.0 milligrams per liter regularly found near the Woodrow Wilson Bridge. But these higher than normal summer flows did push the critical zone of the low dissolved oxygen level further downstream. At the time of the extensive fish kill in May, the dissolved oxygen was less than

1.0 milligrams per liter.

3. The additional nutrient studies that were conducted confirmed the previous findings that were submitted in the report at the enforcement conference of last April, that the major sources of the discharges were from the area sewage treatment plants. The high summer flows carried the nutrient concentrations downstream and the resulting algal blooms were found downstream as well. It did not significantly affect the water quality, as we may have assumed that the high flow may, of course, dilute it. This did not occur.

4. The process of eutrophication in the estuary, with the resulting conversion of carbon and nitrogen from inorganic to organic compounds, was established as having a significant effect on dissolved oxygen resources.

5. The determination of allowable loadings of carbon, phosphorus and nitrogen by zones was adopted by the reconvened conference and was extended downstream, and tentative values computed, utilizing the mathematical model developed by FWPCA. This you can also find in this report which has been distributed.

6. An August 1969 survey showed no detectable concentrations of pesticides having a chlorinated hydrocarbon base within the estuary, or in the effluent of the District of Columbia Water Pollution Control Plant. This chlorinated

hydrocarbon is a more persistent type of pesticide used. However, this finding does not rule out the possibility that there would be appreciable concentrations of pesticides at other times of the year. Further investigations are going to be undertaken.

In addition to these activities, dye studies were carried out in the Piscataway embayment and the Potomac channel in the same area. A report is in preparation. FWPCA is continuing its efforts to determine the transportation of nutrients down the estuary as a function of river discharge.

I might add here, we are also continuing a dye investigation in the vicinity of the concentration of sewage treatment plant outfalls, and this is currently under way.

The FWPCA activities since the reconvened enforcement conference also included an investigation of progress in pollution control at the various Federal installations in the Upper Potomac Estuary. A brief summary of these installations are:

1. The first one is the GSA treatment plant, which serves the Pentagon and provides secondary treatment and chlorination to effluents discharged into the upper estuary. The General Services Administration is presently studying advanced waste treatment methods for use at this plant and methods of handling cooling water discharges from the heating plant.

J. A. Aalto

The cost estimates for these improvements will be included in the fiscal year 1972 budget request, with anticipated completion by August 1973.

The other Federal installations are a little bit farther downstream, out of the critical zone, but still appreciably close to it.

2. The Andrews Air Force Base presently discharges waste from two secondary treatment plants into tributaries of Piscataway Creek, and there are no measurable effects either downstream or in the Potomac Estuary. Preliminary studies are currently under way to combine the plants and provide advanced waste treatment, or to connect to the Washington Suburban Sanitary Commission Piscataway system.

3. The Naval Communications Station at Cheltenham, Maryland, has secondary treatment facilities that also discharge into a tributary of Piscataway Creek. Preliminary estimates will have been completed for connection to the Washington Suburban Sanitary Commission system, and funding requested for fiscal year 1972.

4. The Army base at Fort Belvoir discharges secondary treatment wastes into the Potomac Estuary. A study to investigate the alternatives of providing advanced waste treatment or connecting to the Fairfax County Accotink-Pohick Creek Sewage Treatment Plant has been initiated and the design

is programmed for fiscal year 1971.

There are other Federal activities farther downstream, but they all have facilities providing secondary treatment and disinfection.

Thank you.

MR. STEIN: Thank you, Mr. Aalto.

The report entitled "Water Quality and Wastewater Loadings, Upper Potomac Estuary During 1969," which you have submitted, will be accepted, without an objection, as an exhibit

#2 and will be on file at the Regional Office and at the headquarters of FWPCA.

(Report entitled "Water Quality and Wastewater Loadings, Upper Potomac Estuary During 1969," was received as an exhibit and is on file at the offices of the Federal Water Pollution Control Administration, Middle Atlantic Region, Charlottesville, Virginia, and Washington, D. C.)

MR. STEIN: Are there any comments or questions?

MR. JENSEN: Mr. Chairman, Item 2 on Page 1 of the report, as presented by Mr. Aalto, I believe should show it to be August of 1969, high river discharges experienced in August 1969.

MR. STEIN: Thank you.

Are there any other comments or questions?

(No response.)

MR. STEIN: If not, let us proceed with the next item, "Time Schedules for Sewage Treatment."

RECOMMENDATIONS NOS. 1 AND 2

TIME SCHEDULES FOR SEWAGE TREATMENT

MR. STEIN: May we call on the District of Columbia, Mr. Jackson?

MR. JACKSON: Mr. Chairman:

My remarks will concern first Recommendations 1 and 2.

The District of Columbia has taken a number of steps to comply with the recommendation of the last session pertaining to the design and construction of sewage treatment facilities. The Department of Sanitary Engineering has awarded contracts for the design of primary and excess flow settling tanks including the necessary sludge handling facilities. These facilities are estimated to cost $33 million and are scheduled in such a fashion as to be completed by July 1972, provided budgetary authority is obtained for construction on a timely basis.

At the present time, $8 million is available for water pollution control plant expenditures and we have requested an additional $11 million in our 1970 budget which would give us a total of $19 million toward the total estimated expenditure of $108 million, which, Mr. Chairman, you may recall at our May conference was the secondary facilities, which we explained at that time, to bring our plant roughly from the area of 70 percent removal to 90 percent removal. This 1970 appropriation will exhaust our statutory authority to borrow money from the Federal Treasury.

Last fall (October, 1968) the Department of Sanitary Engineering forwarded requests through administrative channels for additional authority to increase water and sewer rates and to borrow needed construction funds. This proposal has received the necessary approval by District officials and is now awaiting action on the next step by the Bureau of the Budget.

Delays in receiving approval for this proposed legislative authority may upset our fiscal planning and delay the construction schedule. The District Government has taken all appropriate action, but cannot proceed without the requested authority.

It should be noted that the increase in loan authority, which is being requested, and the increase in rates necessary to repay such loans and operate the facility will only permit the financing of primary and secondary treatment facilities ($108 million). At present, the financing of tertiary treatment is considered to be beyond the ability of

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the District's citizens to finance.

According to the recommended schedule, the District of Columbia is to start the design of secondary and tertiary treatment by December 1, 1969. A contract is presently being negotiated for the design of the secondary treatment facilities. There are a number of factors, however, which will delay the completion of the secondary treatment which I would like to call to your attention.

1. The present District of Columbia treatment plant site is inadequate to provide space for the expanded treatment plant. It was reported at the time of the April session of this conference that the District of Columbia had obtained the approval of the Corps of Engineers for a request to reclaim 51 acres of mudflats adjacent to the treatment plant, but that this approval had been conditioned on the approval of the Department of the Interior which had been requested. The status of this matter is unchanged. We are still awaiting the necessary approval of the Department of the Interior.

Mr. Chairman, if I might divert from my prepared statement for just a moment to give a little background of this request for additional land on which to build the facilities which we, as conferees, have agreed to, our first request went to the Corps of Engineers, I believe, in April of 1967, for a permit to dredge from the mudflats adjacent to our plant to construct 51 acres, which we knew would be needed in order to have land on which to build a treatment facility, which, of course, will benefit the entire upper estuary.

The Corps of Engineers gave us a permit conditioned on approval from the Department of the Interior. That condition has never been met, and the Department of the Interior, I believe, has kept this under advisement for that interim period of time.

As you can well appreciate, Mr. Chairman, the time will have to come very soon when a decision will have to be made if we are to have land to build on. In our view, it would be a very logical procedure to take mudflats which cannot, in any sense of the word, be considered wetlands in that area, and, therefore, the value of a treatment plant which would benefit the entire upper estuary -- as a matter of fact, the benefits of that will be felt all the way down the Potomac River -- it would be a very logical procedure to use that land for those benefits and to proceed with our planning and accessibility of land at that point, so that we feel that a decision will have to be made at an early date.

2. The financial situation which will interfere with the completion of the primary and excess flow treatment facilities -- and I mentioned this just a moment ago -- will also interfere with the construction of the secondary treatment

facilities.

3. The Department of the Interior has proposed the consideration of physical-chemical processes in lieu of the secondary and tertiary treatment steps initially proposed. This, Mr. Chairman, has been proposed since our last meeting in May. This proposal has some very intriguing possibilities, certainly from a theoretical standpoint, but it has not been field-tested.

Accordingly, an agreement has been reached and a contract negotiated to significantly expand the District's treatment facility. Since there is no certainty that the research will demonstrate the process to be feasible, the Department of Sanitary Engineering has determined that it should proceed with the design of conventional facilities in order to comply with conference deadlines. This is also a feasible approach from a fiscal standpoint, since costs are increasing and it is estimated that savings of about 15 percent can be achieved on design and construction cost by proceeding now.

If the research shows the physical-chemical process to be advantageous, the District of Columbia will abandon the design of conventional facilities and proceed with the design and construction of the new process. If this change is made, it will add about eighteen months to the schedules set by the conference. It is not feasible to proceed with the design of

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this process now for research must establish the design parameters. Until the research is completed, no one can state with certainty that such a change in process will provide the necessary degree of treatment and result in savings to the District or not. To be considered, of course, is the increased cost resulting from inflation during the time of delay.

As the District indicated in its statement in April, we have doubts that the removal of phosphorus will in fact control algae in the estuary. We are aware of the firm conviction of FWPCA on this matter, but are unsettled by reports which appear in the technical literature which are in conflict with that view. This continued controversy underlines the importance of the intensification of studies on the Potomac Estuary and of the fundamental research necessary to resolve this matter. We, therefore, repeat our recommendation and that of the Metropolitan Washington Council of Governments dated March 13, 1969, that the studies be expanded and expedited so that there will be an assurance that the expenditures which municipalities are requested to make will in fact solve the problem.

We also recommended that a cost-benefit analysis be made of the use of low-flow augmentation as an adjunct of treatment for water quality control in the light of the very high cost estimates of tertiary treatment and storage and treatment of stormwater.

I would like to touch for a moment now on operational improvements.

At the time of the last conference, the District of Columbia reported that it was continuing its research efforts in an attempt to determine the procedures that would increase operating efficiencies. As a result of such research, a polyelectrolyte was found which has been effective in significantly reducing the quantity of solids that escape from elutriation tanks. This research finding has been applied to the standard operational procedures of the plant, resulting in a reduction of about 30 percent of the solids and BOD previously discharged in the elutriation tank effluent.

I think some of the points that Mr. Aalto made are reflective of this improvement.

Recommendation No. 2 pertained to continuous and effective effluent disinfection.

On July 9, 1969, the Department of Sanitary Engineering completed installations which increased its chlorination capacity from 40,000 lbs. per day to 64,000 lbs. per day and a post-chlorination application rate of at least 5 milligrams per liter has been maintained since that time. The significant improvement in bacteriological water quality confirmed by FWPCA river sampling indicates that effective effluent disinfection is being obtained at the District of Columbia's plant.

It is interesting to note that this post-chlorination required 334,367 lbs. in August and more than twice this amount was used for prechlorination. This is typical of summer months, at which time chlorination costs $1,000 per day.

Mr. Chairman, those are my remarks on Recommendations 1 and 2.

I would like to point out that those two points which I mentioned, namely, the polyelectrolyte and the post-chlorination, that all of these improvements, if I may say so, were started prior to May of this year, when the enforcement conference convened.

MR. STEIN: Not prior to the first enforcement conference we had.

Are there any questions or comments?

(No response.)

MR. STEIN: Well, I just have a few, which you might have expected.

MR. JACKSON: I'm way ahead of the game, if you have only a few.

MR. STEIN: Yes. A few is an indefinite number (Laughter).

MR. JACKSON: Here it goes.

MR. STEIN: All right.

Let's go to your statement on Page 2, where you say you don't have enough money even at the present time for primary and secondary, which will be $108 million. Then you state:

> "At present, the financing of tertiary treatment is considered to be beyond the ability of the District's citizens to finance."

Considered by whom?

MR. JACKSON: The District Government.

MR. STEIN: Well, you know, Mr. Jackson, this is the argument we get every day, that it is just too expensive. The issue is, either we are going to have a clean river and find a way to finance it, or not.

I don't see the statement we have here presented by the District Government to be any different than statements we have had from various city officials throughout the country, and as long as we take that attitude, we are bound to have polluted and dirty water in the country.

We had extensive discussions on the additional cost at the last session of the conference, when Assistant Secretary Klein was here.

MR. JACKSON: I recall that, Mr. Stein.

MR. STEIN: Yes. All I would like to do at this point is point out that there may be differences of opinion on whether this is something beyond the ability of the District citizens to finance, on whether this is too expensive. Some people may have the view that we can't afford not to do this.

MR. JACKSON: Mr. Chairman, it is not a question of attitude. I think the attitude is that we want to provide all of the necessities, and we consider certainly in that the advanced waste treatment. We want to give the best treatment we possibly can to the water of our plant, but there is a certain reality in that these improvements have to be paid for. There is a certain reality in the fact that I do not have authority at the moment to do it. There is a certain reality in the fact that I have to raise water and sewer rates in order to pay for funding indebtedness. I do not have that authority at the moment.

If I don't have that kind of authority for the next step of a secondary treatment, I certainly cannot anticipate an even larger figure of $178 million to finance that.

I am not saying that we will never get the money to pay for these things. I am saying that it is beyond the District at the moment -- that is, tertiary treatment is beyond the District at the moment because they have got to get money in which to start our secondary facilities, or the equivalent thereof.

MR. STEIN: Well, I think with that we have certainly an area of agreement to move on, because it is one thing to say that you may not have the borrowing authority, or the financial authority, to do the job now, and you want to seek it, but if we have the attitude that it is beyond the ability to pay, then you are not going to seek it.

MR. JACKSON: No. We intend to seek it, Mr. Chairman. We have sought it. We sought it a year ago. It is already in the process, and I think if you are familiar with the way the Federal Government makes its budget, then it is not necessary to comment further on my ability.

MR. STEIN: I am not talking about your ability. I am talking about the attitude. I think this is the key point.

As I understood it, we all agreed on what, for the sake of brevity, I will call tertiary treatment being necessary here to produce a clean Potomac. I would hope that in achieving the ends we will all work toward obtaining the necessary financing.

MR. JACKSON: No question about that.

MR. STEIN: I am not saying we are just going to go for secondary, and we are not going to consider tertiary.

MR. JACKSON: Well, I think our record in the first conference will show that.

MR. STEIN: Right.

MR. JACKSON: But this, of course, will take a number of years, and I think we have to fully understand what the situation is.

MR. STEIN: I'm sure of that.

The next point is something that I just want to spotlight and see if we can get something working toward an effective solution on at this conference, and that is the additional land necessary to expand the plant.

Again, the use of the term "mudflats" adjacent to the plant being land that is not wetland, may be a conclusion of the District Government, but I don't know that it is universally held.

I would suggest that we keep this in mind if we are going to expand the plant. It is clear that you are going to have to have space to put it, and I think we should, at the end of this conference, try to come up with some kind of approach where we can move towards resolving this site problem.

I think the first thing we have to do is to agree among the parties, at least the District and the Federal Government, as to where the site will be, and once we agree on that we can move on to the next step of how we are going to get that site.

I can assure you that once the site is agreed on, we will do everything we can to assist in getting that site for the plant, but I think we have to get over that first hurdle first, and that is to be sure where we are going to get this additional land to put the expanded facilities.

MR. JACKSON: Well, if we get over the initial hurdle, we don't have a second one.

MR. STEIN: I'm not sure. There is a question here. The question here is, if you are going to build this up in the river, or are you going to go somewhere else? If you are going to go somewhere else, you may have to get that land. We can't make this assumption.

I think the first one is, where is the site going to be that is agreed upon by the Federal Government and the District, and we just have to come to grips with that problem and come to an agreement if we are going to move forward.

MR. JACKSON: No question of this, Mr. Chairman.

MR. STEIN: All right.

MR. JACKSON: This is the two years I have been talking about.

MR. STEIN: Well, I hope we will try to get something at this conference which will meet this problem head on.

MR. JACKSON: Mr. Chairman, may I just comment?

If we can't agree on a site, I would like to point out that the District of Columbia just has no sites for the kind of wastewater disposal, solid waste disposal, or any of these unwanted but very necessary services to our population.

I believe we have apprised the Federal Water Pollution Control Administration of that. We have sent in comments on what sites might be available. We have reviewed that. I think you have that. It can be summarized in simply saying that if we are to build a plant, we have to have land to build it.

MR. STEIN: I don't think there is any question of that.

MR. JACKSON: In an efficient location.

MR. STEIN: That's right. I think we understand each other on that.

MR. JACKSON: Good.

MR. STEIN: But I do think we have to get up something to get this issue on its way to being resolved, and not just leave it hanging back and forth.

The next point is the question of phosphorus removal. Again, I think we all agreed, including the District, on the program of phosphorus removal for the control of algae.

Now, you say because of these reports, that you are "unsettled," is the word that you use.

I am very much aware of these reports, but we have agreed upon the program for phosphorus removal here. You talk in terms of expanding studies, and I think these studies might be expanded, even if, let's assume, they will be expanded in accordance with your recommendations; but do you really think that if we expand and expedite these studies that you talk about, that that is going to remove these doubters who say that this won't work?

I am not sure that the expanded studies you are talking about are going to provide the definitive answer and wipe away all dissident views on phosphorus removal.

In other words, if we are committed to a program of phosphorus removal, then we should go ahead with the program of phosphorus removal. If we go ahead on the assumption that any study, however well constituted, in the foreseeable future is going to get in technical articles, as you point out, which are in conflict, with a view to changing people's minds, I believe we are approaching it a little unrealistically. I don't think we are going to change these people by these studies.

MR. JACKSON: Mr. Chairman, I don't suppose you ever change people's minds completely, but I will answer you in the same sense, and with the same example that I think we are both following in connection with the secondary treatment requirement which we agreed to last May, namely, 90 percent removal, and we are to go ahead with that.

Nevertheless, after that agreement was made, we all of us, agreed that the question of physical-chemical process should also be investigated. I am not sure that that is going to wipe out all the doubts of those who feel that that is not going to work either. But, nevertheless, we did agree, and for the same reason I have made this statement here. I think it is just as valid here as it was when we agreed after the last enforcement conference, that we ought to take a look at physical-chemical methods and be sure that we have something valid.

MR. STEIN: As I understand it, we are still all firm on the necessity of removing the phosphates at this time for algae removal. Is that correct?

MR. JACKSON: We are on the record, Mr. Chairman, I think as agreeing that tertiary treatment is a needed treatment, and that is in the picture for the Upper Potomac, the removal of both phosphorus and nitrogen.

You may recall that we came into this conference last time talking of phosphorus only. We at that conference indicated we thought nitrogen ought to be removed along with phosphorus, and I believe our discussions since that time have been along those lines, so I don't really see any change in the situation.

MR. STEIN: Mr. Hope, do you want to say something?

MR. HOPE: I think we should keep in mind the fact that the commitment which you referred to, Mr. Chairman, was based on an expected end result from carrying out certain operations, and that, if we cannot receive somewhat more categorical assurance that the removal of phosphorus and nitrogen will, in fact, control algae, I think there might be a substantive question raised as to whether the dollars to be expended for the purpose of removal can be justified.

To think of removing phosphorus simply for the sake of removing phosphorus is not a sufficient basis on which to justify this level of expenditure in my mind.

MR. STEIN: Well, I think as always, Mr. Hope, I understand exactly what you said.

As I understood the judgment of the conferees, the proposal was to remove phosphorus not simply for the purpose of removing phosphorus, but to control algae. If the question here is that we are beginning to have doubts about a program which we thought was squared away on phosphorus removal and you feel you need further assurances before you feel that the District is committed to go ahead with this program, we had better examine that question very, very closely to see what kind of assurances can be available that can be relied upon.

As you probably know, we have tremendous programs on Lake Erie and Lake Michigan and Lake Superior committed to phosphate removal. Presumably, the administrators of all the

States involved there, and they run up to about eight or ten, have thought the present state of the art presented these assurances and removal of phosphates would work in removing algae. The Federal people there thought it would work.

Now, if there are any additional assurances that we have to come up with before the District is committed to the program, we should know this.

The dissenting views were available to these States, which also agreed on the phosphate proposal, and I think these dissenting views always will be with us.

May we go on to one other point? I just want to make a comment here, and, Mr. Jackson, you may want to reply to this. But, you also say that you recommend that a cost-benefit analysis be made of the use of low-flow augmentation as an adjunct of treatment for water quality control in the light of the very high cost estimates of tertiary treatment and storage and treatment of stormwater.

You do know that in the Federal Water Pollution Control Act there is a statement of policy on this matter, where the Congress has stated that low-flow augmentation is not to be used as a substitute in pollution control for adequate treatment at the source.

MR. JACKSON: I am aware of that, Mr. Chairman.

MR. STEIN: All right. And you know we are bound, at least in our operations, by what is contained in the Federal statutes.

MR. JACKSON: There is no question about that.

As far as a substitute is concerned, there is also no question, I believe, that there is nothing like having water where water is needed, particularly when it has dissolved oxygen in it.

MR. STEIN: Are there any other questions or comments?

Mr. Jensen.

MR. JENSEN: Mr. Chairman, I have several comments.

First, I want to respond to Mr. Jackson's comments which appear on Page 4 of his report, and which refer to a recommendation from the Metropolitan Washington Council of Governments for a continuing study of the Potomac.

Our Chesapeake Technical Support Laboratory has been engaged in such a study for some five years, really ever since the recommendations of the Council were made available to us. We have used their recommendations in the formulation of our projects.

We have presented, at the last one of these conferences, a very detailed report on the progress which has been made, which defines and describes the relationship of nutrients to the observed algal blooms in the estuary. Mr. Aalto has

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recently reported on the continuation of these studies through the next six months, from the past six months. We intend to continue our studies in the estuaries.

It seems to us that we do have a very large body of data on this.

We would welcome any critical views that the District or the other agencies in the area might wish to make of these. If you wish to have your scientists or your engineers go over these and submit formal, specific comments that would describe or identify any deficiencies in our studies, we would be delighted to have them.

I will be writing to the various members of the Council of Governments within the next week, proposing that they act on their own recommendation that they establish a scientific advisory committee, and that we jointly review the progress which we have made.

There is a very large amount of money involved. It is critical, I think, to the future of the Potomac. We think that we have, up to this point, a reasonably adequate study.

I would also want to ask about three or four questions on this matter of financing.

1. It seems to me that a substantial percentage of the wastes which are treated in the Blue Plains facility originate in Federal facilities. I believe it is also correct

that you bill the Federal facilities for this service.

Is that correct, Mr. Jackson?

MR. JACKSON: I think not. I am not sure whether you are referring to the contribution of the Potomac interceptor --

MR. JENSEN: No, sir. I am referring to the various Federal establishments in the area, the National Institutes of Health, the White House, and so forth.

MR. JACKSON: Well, we receive wastewaters from, of course, any Federal establishment that is tributary to our system, but I wouldn't say that this is an extremely large portion of it. It certainly is widespread. We serve a great many Federal institutions, just in our day-to-day operation of the sewerage system.

MR. JENSEN: And you do bill the Federal establishments for your sewer services?

MR. JACKSON: The Federal Government pays a use charge, the same as anyone else.

MR. JENSEN: So that the statement then, when you say it is considered to be beyond the ability of the District citizens to finance, this includes the charges that would be made to the various Federal agencies?

MR. JACKSON: Well, the District citizen, of course, is a user, the same as a Federal establishment. The contribution of the District citizen is larger than that of the Federal establishment, but when I say "unable to pay," I am speaking of all of the revenues available to the District of Columbia.

MR. JENSEN: I do not believe that the Federal establishments have indicated that we would be unwilling to pay the service charges that you might establish.

MR. JACKSON: Not at all, no. You have never really been asked in that sense.

MR. JENSEN: Secondly, I believe that almost 50 percent of the wastes which you treat originate in either Virginia or Maryland, and I have reviewed the contract that you have to provide this service. I find nothing in it that indicates that you are not able to pass this 50 percent of the cost back to the originators.

MR. JACKSON: No question but what your statement is true. It is a cost that the users of the entire system would have to pay. That is correct.

MR. JENSEN: So that this statement, then, that you have, that it is beyond the ability of the District citizens to finance, applies to only a portion of your problem in the District, then?

MR. JACKSON: Well, I don't see how the answer can be anything but yes.

MR. JENSEN: Can you give us, or could you submit for the record, perhaps, an indication of what the present sewerage charge is to an average family in the District?

MR. JACKSON: I would be glad to. I will be glad to.

MR. JENSEN: Could you give us an estimate of what it will cost with this higher degree of waste treatment?

MR. JACKSON: Yes, we can provide such an estimate of that. No problem there.

MR. JENSEN: Thank you.

MR. STEIN: Are there any further comments or questions?

MR. JOHNSON: Mr. Chairman, I would like to make a comment.

MR. STEIN: Yes.

MR. JOHNSON: I also would like to ask a question of Mr. Aalto at the proper time in regard to this report.

MR. STEIN: Right.

MR. JOHNSON: My comment is related to Mr. Jackson's testimony in one of your questions in regard to the filling of these mudflats in order to provide expansion ability for the plant.

As Staff Director of the Commission, I think I have been on record several times as endorsing the Department of the Interior efforts to protect the wetlands in the Potomac

Estuary.

In this particular instance, I have come to the conclusion that this would be probably the highest use for this particular area, that this is, in fact, a mudflat, and so I want the record to show that I believe that this 51 acres should be used for this purpose as being the highest and most beneficial use that can be made for this land.

Now, it would appear to me in regard to your further questioning that the District of Columbia has used initiative in making requests for this, and the Department of the Interior apparently is just sitting on this request, and it would seem that the action necessary is action on the part of the Department of the Interior.

Do you want my question of Mr. Aalto now?

MR. STEIN: No. I know we have been sitting on this problem of the land site for a long time. But, I would suggest, Mr. Johnson, if we are going to move this ahead, we cannot keep trading back and forth on who is to move. If we do, I am not sure we are going to get any more movement than we have gotten in the past.

I am suggesting that after the executive session, this conference come up with a mode of operation whereby it will take the initiative, as conferees, to try to get that question of the site off dead-center and resolved. This is a key point in moving the whole program forward and we should take it on as one of our problems.

I make no judgment as to the validity of the request, or the appropriateness of the site. My main point is -- and I agree with Mr. Jackson here -- that land must be obtained somewhere for the plant. Unless we obtain that land, all the talk we have of secondary, tertiary treatment and chlorination is not going to be worth a darn if you don't have any place to put it. So I would suggest you do that.

Do you want to ask your question of Mr. Aalto now?

MR. JOHNSON: I will. I will be prepared to make such a recommendation at the proper time.

My question to Mr. Aalto is related to Item 4 of the Summary and Conclusions in Chapter II of this report, in which there is a statement in regard to the total carbon entering the upper estuary from all sources, and I wonder if Mr. Aalto, for my benefit and for the benefit of probably a number of other people here, would expand on that statement a little bit.

MR. AALTO: Mr. Johnson, this information I believe appears later in the report.

This is a total of the organic and inorganic carbon, and, frankly, I have seen this finished report for the first time -- that is, since we prepared it, naturally -- reproduced here this morning, and I can't find the place directly, but there is a table which indicates it.

MR. STEIN: Rather than hurry this, why don't you get back to your technical people, and we will call on you a little later, because I think I would rather not have an off-the-cuff, hurried response to this question. We will get to you a little later.

MR. AALTO: All right.

MR. STEIN: Thank you.

Are there any further comments or questions on the D. C. presentation?

(No response.)

MR. STEIN: If not, let's call on Maryland.

Mr. Bingley.

MR. BINGLEY: The Secretary of Health and Mental Hygiene of Maryland ordered the Washington Suburban Sanitary Commission on September 24, 1969, to have contract plans and specifications for the additions to the Piscataway Sewage Treatment Plant to handle a flow of 30.0 mgd completed and bids taken on or before November 2, 1970, and further ordered that the additions to the plant be in operation no later than December 31, 1972.

The Washington Suburban Sanitary Commission expects to complete expansion of the present 5 mgd treatment plant at Piscataway to a total capacity of 15 mgd by December 1970. Expansion to the ultimate presently designed capacity of 30 mgd is scheduled for completion by December 31, 1972. Population projections by the Maryland-National Capital Park and Planning Commission indicate an estimated flow at the Piscataway Plant of 25.5 mgd by 1980. The Sanitary Commission has indicated that they have tentative plans to further expand this plant to treat 60 mgd by 1984, when they anticipate that flows will exceed the present designed capacity of 30 mgd.

Delays in proceeding with the additions have resulted from failure of the Department of the Interior and the Washington Suburban Sanitary Commission to reach an agreement to allow the construction of an outfall sewer to the Potomac River.

We have one other large plant considered in the basin --that for the Charlestown Sanitary Commission.

Plans and specifications for this plant, known as the Chapmans Landing Plant, to serve the Mattawoman drainage basin in Charles and Prince George's Counties, are expected to be completed by mid-1970. The present schedule calls for the completion of construction by the latter half of 1972.

This project is being designed to handle a forecast population of 38,000 people in 1985.

At the present time, an oxidation pond in the Waldorf area designed to serve 2,400 people is under construction and will be completed within the next six months, and this facility will, of course, be abandoned when the Mattawoman interceptor and Chapmans Landing sewage treatment plant are ready for operation.

As to chlorination, we have chlorination in all our treatment plants in the State of Maryland, and I think that the chlorination facilities on the plants in the basin, certainly the large plants, are being properly operated.

Mr. Chairman, you have an item on the Piscataway treatment plant later, so I am going to hold any further discussion on that until later, sir.

MR. STEIN: Yes. Are there any comments or questions?

(No response.)

MR. STEIN: I guess we should hold the discussion on Piscataway.

MR. BINGLEY: It is Item 5, is it not, sir?

MR. STEIN: Yes, until later.

I would just like to call your attention to one paragraph here, and it states:

"Delays in proceeding with the additions" -- presumably to the Piscataway plant --

> "have resulted from failure of the Department of the Interior and the Washington Suburban Sanitary Commission to reach an agreement to allow the construction of an outfall sewer to the Potomac River."

Does that assume the agreement is going to be reached to allow the effluent from that outfall to go into the Potomac?

MR. BINGLEY: That, I suggest, sir, relies on completion of an agreement between Interior and the Sanitary Commission. I can't say whether this will be accomplished or not, sir.

MR. STEIN: Right, but as far as I understand the situation, and this is just for a point of clarity, there has been no judgment made yet that a sewer will be allowed to go from that plant directly to the Potomac River.

MR. BINGLEY: This is right.

MR. STEIN: Correct.

MR. BINGLEY: There has been no agreement reached.

MR. STEIN: And the decision may be the other way -- that the outfall line may not be permitted. That is a possibility.

MR. BINGLEY: Well, without permission it can't be constructed, that's for sure.

MR. STEIN: Right; and then some other way will have to be taken to meet this problem if the permission is not granted.

MR. BINGLEY: That is correct.

MR. STEIN: All right. I think we are clear on that. Are there any other comments or questions on this?

Mr. Jensen.

MR. JENSEN: Mr. Chairman, I have two general observations on this.

The first relates to the plans which have been submitted to us by the Washington Suburban Sanitary Commission. The plant which has been designed, in response to the order from the Maryland Secretary of Health and Mental Hygiene, provides only conventional secondary treatment. I have advised, by telegram, the Secretary of Health that these plans are incompatible with the recommendations of the enforcement conference, and have urged that revised plans, which would include complete treatment, advanced waste treatment, if you will, be included, and that this be done at the earliest possible date to facilitate construction.

MR. STEIN: Does Maryland want to comment on that?

MR. BINGLEY: We received that telegram at approximately 2 o'clock yesterday afternoon, Mr. Chairman, and I can't comment at this stage of the game.

MR. STEIN: Well, it wasn't a surprise, I guess, was it? We did agree on tertiary treatment.

MR. JENSEN: My second comment on this relates to the Washington Suburban Sanitary Commission and to the complex relationship between the Commission and Mr. Jackson's operation in the District.

I have reviewed the 10-year plan of the Washington Suburban Sanitary Commission, and there are several elements in it that I find somewhat disturbing.

First, there seems to be no mention of an engineering analysis of the relative merits of constructing a major interceptor to the Anacostia watershed which would tend to bring additional wastes into Mr. Jackson's facility.

Secondly, there is some language that indicates that by 1980 the Commission may find it necessary to construct another major interceptor into the Blue Plains facility.

I would sort of like to know how this is being balanced against Mr. Jackson's concern for adequacy of space. Can he really continue to provide unlimited treatment capabilities at Blue Plains?

MR. BINGLEY: Mr. Chairman?

MR. STEIN: Yes, Mr. Bingley.

MR. BINGLEY: Mr. Jensen, I assure you that we would appreciate your comments on that report before we complete our review, because, as you know, we are charged with approving these plans, and we would be most happy to have comments from the Federal agency.

MR. STEIN: Are there any other comments or questions?

MR. JACKSON: Mr. Chairman, I assume from the way the question was put that it was an initial question to the Washington Suburban Sanitary Commission. I will be happy to comment.

MR. STEIN: Well, I didn't know whether that was a rhetorical question, but it seems to me that it was directed towards you, and how far you expected to expand the plant.

MR. JACKSON: I get all the rhetorical questions, and someone else gets the factual ones. Is that it?

(Laughter.)

MR. STEIN: I am just giving you a chance. You can make it a rhetorical question if you want to, and don't answer it.

MR. JACKSON: Thank you, Mr. Chairman. I will comment.

What Mr. Jensen says, of course, is obviously true — that, as you view the 51 acres that we need and the amount of land that we have, we just can't from now on ad infinitum continue to build on thin air. We don't have any aerial rights at this point that we can build on, any more than our land rights.

But we can and have been in touch with the Washington Suburban Sanitary Commission on their plans and ours. I think it is probably factual to state at this point that WSSC is looking to us to treat their sewage and discharge it, and that is just about where it stands.

The problem lies, of course, in the increasing flows which are mounting in proportion from the outside. The District of Columbia population is decreasing. Our contribution of flows from this plant will be on the decrease. The flows from Virginia and Maryland will be on the increase.

So, it is pretty obvious that the large expansion in the future will have to be to serve the increasing populations on the outside of the District, but these are populations which are naturally tributary to this plant.

We have, as I believe we have touched on before, mentioned that if advanced waste treatment is in the future and we certainly agree that it is--it is going to take land to build it on. While we can handle probably the flows on secondary treatment without a great deal of difficulty, yet we can't plan on that. This is where we have to have the additional land to formalize our plans.

MR. STEIN: Thank you. I think that was a very complete answer.

One thing: I wonder where you are going to find that thin air? You know, I've been in Washington for about thirty years. The air wasn't very thin when I got here, and it seems to me it has gotten thicker since.

(Laughter.)

Are there any other comments or questions?

(No response.)

MR. STEIN: If not, may we call on Virginia?

Mr. Paessler.

MR. PAESSLER: Mr. Chairman, following the sessions of the conference convened in April and May of this year, the staff reported to the Board the recommendations developed as a result of this conference, and the recommendations were favorably received by the Board. Each political subdivision that is affected by the recommendations was duly notified.

With respect to Recommendation No. 1, the time schedule for installing advanced waste treatment, we are pleased to report that since development of the recommendations on May 8, 1969, and the subsequent approval of the recommendations by the Secretary of the Interior, the political subdivisions in Virginia -- Fairfax County, Arlington and the Alexandria Sanitary Authority, have proceeded to retain highly qualified consulting engineers to develop plans and specifications for treatment facilities capable of complying with the load limits set forth in Recommendation 1.

We are pleased to report that the consultants retained are proceeding on schedule and all political subdivisions will provide preliminary plans by the indicated deadline, which, I believe, is March 1, 1970.

With respect to Recommendation No. 2, continuous and effective disinfection effluents, we are also pleased to report that the sewage treatment plants in Virginia are practicing continuous effective effluent disinfection. We are hopeful that the effort by the owners of the Virginia facilities, together with those of the other conferees, has resulted in an improvement in water quality in the Washington metropolitan area, and we heard here today that this is so.

Mr. Chairman, that completes my brief report.

MR. STEIN: Thank you, Mr. Paessler.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, that sounds very good. You should be proud to be a Virginian.

MR. PAESSLER: Thank you.

MR. STEIN: May we call on FWPCA?

MR. JENSEN: Mr. Chairman, I believe that Mr. Aalto has already presented a preliminary report on this.

Do you wish to add to your initial remarks, Mr. Aalto?

MR. AALTO: No. I believe on the question raised by Mr. Johnson, the information is in another table.

MR. JENSEN: Mr. Chairman, in addition, then, to Mr. Aalto's remarks, we have, in the period intervening, identified an additional Federal facility which discharges waste into the conference area, the Naval Ordnance Laboratory, which is located in Prince George's in Montgomery County discharges approximately 100,000 gallons per day to its secondary sewage treatment plant. It discharges in the Paint Branch of the Anacostia River.

We will recommend that this name be added to our list of Federal establishments, and that a construction schedule compatible with those of the other smaller plants in the area, be adopted.

MR. STEIN: That is for tertiary treatment?

MR. JENSEN: Yes, sir.

MR. STEIN: Thank you.

Any comments or questions?

MR. JACKSON: Mr. Chairman, just as a matter of information, I was under the impression that there was some waste load at Indian Head down below. This is not mentioned in the Federal establishments. I did notice the omission from the report on Federal establishments.

I was wondering if this was an oversight, or perhaps I am in error in bringing it up.

MR. JENSEN: Mr. Jackson, I believe that that is out of our conference area at this time.

MR. JACKSON: Thank you.

MR. JENSEN: We are proceeding, though, with correction of waste treatment wherever such problems exist.

Mr. Aalto, could you expand further on the Indian Head situation?

MR. JACKSON: Very good. I will withdraw my question, since it is outside of the conference area.

MR. STEIN: If we can supply the information, let's do that.

MR. AALTO: Yes, I can do that.

I have this information, but being outside of the immediate area of the conference, I had not included it.

At Indian Head, the complete secondary treatment has been provided at several locations. Because of the nature of activity, manufacture of explosives and propellants, they had to have separate installations for waste treatment because of the huge area involved, but this work has been completed. The secondary treatment has been completed and it is actually in operation now, but has not been accepted by the Navy to date.

We believe this will be entirely satisfactory, providing adequate primary and secondary treatment at these locations, with chlorination of effluents, is acceptable.

MR. STEIN: You are not planning to go to tertiary treatment there?

MR. AALTO: No, that was not included in the conference area for tertiary treatment.

MR. STEIN: All right. Are there any further comments or questions?

(No response.)

MR. STEIN: If not, thank you.

Let us proceed now to industrial waste treatment.

RECOMMENDATION NO. 3

INDUSTRIAL WASTE TREATMENT

MR. STEIN: May we hear from Maryland, Mr. McKee?

MR. MC KEE: Mr. Chairman:

Recommendation 3 of the Conference Report reads:

"The following industries are to comply with orders of the Maryland Department of Water Resources for completion of treatment facilities by January 1, 1970:

Industry	Location	Receiving Waters
Inland Materials Sand & Gravel	Clinton, Maryland	Tinkers Branch
Potomac Sand & Gravel Corp.	Greenway Flats	Potomac River
Silver Hill Sand & Gravel Co.	Silver Hill	Henson Creek

Industry	Location	Receiving Waters
A. H. Smith Sand & Gravel	Branchville	Indian Creek
Devlin Lumber & Supply Co.	Rockville	Crabs Branch
Metropolitan Fuels Co.	Bethesda	Little Falls Branch
Mineral Pigments Corp	Muirkirk	Indian Creek
Arundel Supply Co.	District Heights	Southwest Branch
Banning Plymouth, Inc.	Hyattsville	Northeast Branch"

ACTION TAKEN ON RECOMMENDATION 3

The Department of Water Resources has taken forceful action to implement the requirements of Recommendation 3, as contained in the report on the 1969 Potomac River - Washington Metropolitan Area Conference. Recommendation 3 calls on nine industries to comply with orders of the Maryland Department of Water Resources to provide adequate waste treatment by January 1, 1970.

Maryland law provides for the issuance of orders as the final step of a special water quality enforcement procedure. A detailed description of this "Notice of Violation Procedure" is attached to this report.

Specifically, the Department has taken the following action on Recommendation 3:

A. Issued a Notice of Violation, held the required Department Hearing, received and approved a Plan and Schedule of Compliance, and issued an Order to:

   1. Mineral Pigments Corporation (Muirkirk)

      Notice of Violation issued on April 29, 1969

      Notice of Violation Hearing held on June 11, 1969

      Order for correction issued on July 22, 1969.

B. Issued Notices of Violation, and held the required Departmental Hearing, and is continuing the required enforcement procedures for the following industries:

   1. Silver Hill Sand & Gravel Co.

      In this instance, the Silver Hill Sand & Gravel Company, Notice of Violation Hearing was held on August 5, 1969, and continued at that time, to allow for additional inspections and the development by competent consultants of necessary control facilities. The order

P. W. McKee

on this company will be issued after plan and schedule of compliance is approved by the Department.

2. On the A. H. Smith Sand & Gravel Company, Notice of Violation was issued on July 22, 1969, and the hearing was held, but at the hearing it was determined that the Prince George's County retains jurisdiction over the sediment discharges from this operation. Since the sediment discharge to the waters of the State had been corrected by a repair of District facilities, further administrative action by the Department was not necessary at that time. Inspection and monitoring of this operation will continue.

The Department cannot issue an order because the Court retains jurisdiction in this case. Court jurisdiction is a result of previous enforcement action by the Department for this area.

3. Banning & Sons Motor Company: A Notice of Violation has been issued and the hearing has been held. The Department has received a letter of compliance, stating that all process drains have been connected to the Washington Suburban Sanitary Commission's sanitary sewerage system.

However, an order is in preparation to enforce this particular action.

C. Our Department has issued the Notices of

Violation to the following industries and scheduled dates for the required Departmental Hearings:

1. Devlin Lumber & Supply Company: The hearing for this industry will be held on the 20th of November.

2. Metropolitan Fuels Company: The hearing will be held on December 5th.

D. The Department has also made periodic inspections of the following industries and found that the wastewater discharges are in compliance with Maryland water quality standards.

1. Inland Materials Sand and Gravel Company.

2. Arundel Supply Company.

Recommendation 3 also called for enforcement action to be taken against the Potomac Sand & Gravel Company's dredging operations in the Potomac River at Greenway Flats. On June 16, 1969, the Department of Water Resources issued a "Permit for Waterway Construction" to the Potomac Sand & Gravel Company and included as part of that permit certain specific conditions requiring that the company's operations at this location will not contravene the water quality standards of the State of Maryland. The specific conditions are:

> "4. This Permit is further subject to all laws and regulations now in effect or that may be subsequently adopted by this Department and may be revoked if it

"becomes at variance with the policy and laws of the State, or that the Applicant may fail to comply with the provisions of this Permit.

5. This dredging and use of the dredging equipment in the river is subject to the continual compliance by the Applicant with the Water Quality Standards for this part of the Potomac River, as described in Maryland Water Resources Regulation 4.8. The Standards for this portion of Potomac River are included in Group C Water Uses for water contact recreation, propagation of fish, other aquatic life and wildlife and for industrial water supply.

6. Sewage from this dredging equipment shall be treated in a manner approved by the Department before discharge of effluent into river. Trash, oils or other waste is to be taken ashore and prevented from discharge into river.

7. The location of all dredging is to be in strict accordance with the plans submitted by the Applicant and made a part of this Permit. Dredging within this area described above is permitted to a depth of approximately 50 feet below mean low water and no closer than 300 feet to the present shoreline at mean low water of riparian land owned by the Applicant.

"No material of any kind shall be deposited in the river outside these limits. All material rejected or returned from the dredging operations is to be carefully spread to prevent the formation of ridges. The bottom in all cases is to be left at least as deep as before dredging was begun. Material is not to be temporarily stock-piled in the river.

8. The Applicant must take all reasonable steps to minimize the silt pollution and disturbance to the stream during construction."

The permit and its specific conditions designed to protect the water quality in the Potomac River at Greenway Flats were accepted by an authorized agent for the Potomac Sand & Gravel Company, as noted in the Acceptance Clause in the Permit.

This, Mr. Chairman, is our report on the industrial operations in Maryland in the enforcement area.

MR. STEIN: Thank you.

Are there any comments or questions?

Mr. Jensen.

MR. JENSEN: I have no specific comments, Mr. McKee, on the material that you have presented. I do want to raise a question about our water treatment plants in the Washington metropolitan area, if these should not be considered as a sort of a special type of industry, and that we be somewhat concerned with the waste products from these water treatment plants.

MR. MC KEE: Mr. Jensen, actually these were not listed in the original recommendations of the enforcement conference. However, the Department has, not in this specific area, but in other areas in the State of Maryland, taken action for the control of the sediment discharged from water treatment plants.

MR. STEIN: I don't know -- you may want to note this, Mr. Jensen -- the conferees may want to consider this in the executive session, if you want to include water treatment plants as a special category to be watched for the discharges from those plants.

I think this report is very encouraging, Mr. McKee. This is one where we have this list and we find that the list is being whittled down. Several industries are in compliance.

As you recognize, the name of the game we are playing here is to get all these municipal and industrial lists down as small as possible, and this is really some evidence that we are moving in this direction.

Do we have in the record somewhere the proposed dates that you have indicated on these various industries, where you have orders, and so forth?

MR. MC KEE: In the document I presented to you, Mr.

Chairman, the dates are listed.

MR. STEIN: Right.

MR. MC KEE: And I can provide you with the orders issued to the industries which require dates of compliance, if you so wish.

MR. STEIN: I think it would be helpful if we could have it.

Are there any other comments or questions?

(No response.)

MR. STEIN: If not, thank you very much, Mr. McKee.

For the next two items we will call on someone from the audience, Mr. Julian Holmes, who has a short statement.

Mr. Holmes.

MRS. PIERE: He was not able to come this morning.

MR. STEIN: All right. I guess he is not here, but he will be here sometime later.

We will now go to No. 3, Heated Water Effects.

RECOMMENDATION NO. 3

HEATED WATER EFFECTS

MR. STEIN: We will call on the District of Columbia.

MR. HOPE: Mr. Chairman:

I may say that I am somewhat encouraged by the earlier somewhat critical remark on the quality of the air in the District of Columbia.

I might just say off the record that our participation at this particular conference is delaying somewhat our submission to the National Air Pollution Control Administration our standards, so we are working in that area, Mr. Chairman.

MR. STEIN: Right. I thought you were going to say we are contributing to the problem.

(Laughter.)

MR. HOPE: We have our problem on your cigars, as you know, Murray.

(Laughter.)

MR. STEIN: Yes.

MR. HOPE: Recommendation No. 3 is Heated Water Effects.

The field work associated with the Potomac Electric Power Company's study of heated water discharges was completed in September. Mr. L. W. Cadwallader, Vice President-Generating, will describe the study and present a summary of his preliminary findings. It is my understanding that that presentation will be presented tomorrow.

As a sequel to the PEPCO study, a biological study of the Potomac and Anacostia Rivers was conducted by the Federal Water Pollution Control Administration during October. It is our understanding that the study results will be reported by FWPCA before January 1, 1970.

An evaluation of the two studies will be made by the Department of Public Health. After making such evaluation, in consultation with FWPCA and PEPCO, the Department of Public Health will determine what, if any, corrective actions are needed. We expect to report to the conferees by January 1, 1970. It is my understanding that that presentation will be made tomorrow.

MR. STEIN: Thank you.

Do we have any comments or questions?

(No response.)

MR. STEIN: At least, in a preliminary way, Mr. Hope, that sounds very encouraging and we look forward to hearing from Mr. Cadwallader tomorrow.

The next item on the agenda is "Future Needs Study."

RECOMMENDATION NO. 4

FUTURE NEEDS STUDY

MR. STEIN: The FWPCA.

MR. JENSEN: Mr. Chairman, the report on Recommendation 4 will be presented by Mr. William Colony, Director of our Planning Staff, Middle Atlantic Region.

Mr. Colony.

STATEMENT OF
WILLIAM M. COLONY
CHIEF OF PLANNING, MIDDLE ATLANTIC REGION
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
DEPARTMENT OF THE INTERIOR
CHARLOTTESVILLE, VIRGINIA

MR. COLONY: Mr. Chairman, Conferees, Ladies and Gentlemen:

Recommendation 4 calls for a detailed analysis of alternative methods of meeting future water quality requirements and sewerage needs in the Washington metropolitan area by 1971. It further requires that such studies and analyses shall give consideration to advances in waste treatment technology; space limitations related to expansion of the existing waste treatment plants of the area; fail-safe sewer systems to prevent raw sewage discharges; possibilities for load transfers between treatment facilities; opportunities for use of reclaimed water; locations of sewers and alternative treatment facilities and discharge points; and methods for disposal of solid wastes from such treatment facilities. It is quite clear that such a comprehensive planning approach will require close coordination between State, interstate, local, and Federal agencies responsible for pollution control and water resource management.

The intent of the conferees in making this recommendation for initiation of a comprehensive planning activity was to provide the mechanism for evaluating alternatives to meet the needs of the future, beyond the time frame of the immediate actions required under other recommendations of the conference. In order to delineate a specific course of action in response to this recommendation, staff of the Federal Water Pollution Control Administration Middle Atlantic Region have held informal discussions since the conclusion of the conference on May 8 with representatives of the Metropolitan Washington Council of Governments and other interested agencies of the metropolitan area. On October 27 a formal meeting was held with representatives of State, interstate, and local jurisdictions and agencies to determine what action has been taken pursuant to Recommendation 4. (A listing of agencies and organizations represented is attached.)

Representatives of the Commonwealth of Virginia and several of its local jurisdictions stated that actions were under way or shortly to be initiated which would focus attention upon advances in technology, space limitations, siting and load transfers in their pollution control programs. The status reports from these jurisdictions indicated an awareness of the regional implications of wastewater treatment and disposal within the Virginia portions of the metropolitan area. Consultant studies are under way or anticipated by these jurisdictions. They will be coordinated and, in some instances, financed jointly.

The Washington Suburban Sanitary Commission in the Maryland portion of the metropolitan area has completed a ten-year water and sewer program as required by Maryland State legislation. The program is based only upon continuation of the present agreement with the District of Columbia for treatment of a significant portion of the wastes from the suburban Maryland counties at the D. C. Water Pollution Control Plant. This program does not appear to give any consideration to the problems raised by Mr. Jackson of the District of Columbia during the enforcement conference. Specifically, the impacts associated with unlimited expansion of that jurisdiction's sewerage system as the receiver of a majority of the wastes of the metropolitan area.

The District of Columbia, in cooperation with the FWPCA, is actively engaged in an evaluation of advanced waste treatment technology in the design for expansion of the existing facility to meet the requirement of the enforcement conference. The District of Columbia feels strongly that further research in the Potomac Estuary should be carried out concomitantly with the development of an advanced waste treatment program for the District.

The District of Columbia is currently experiencing a severe shortage of land on which to expand present facilities and on which to place future pollution control facilities. A study is needed to determine present and future load needs and to investigate alternative sources of land and the costs and procedures necessary to acquire the land.

There was considerable discussion and some agreement at the October 27 meeting on the need for a mechanism to bring about a systematic evaluation of regional alternatives in an effective resource management program involving land use, waste collection and disposal, and provision of water supply. It was pointed out that resource management programs developed by local jurisdictions must be further evaluated within the concept of their impact and effect upon similar programs of the total metropolitan area. This inherent interrelationship has been demonstrated in all past analyses of the complex problems associated with growth and development of an urban area.

Staff of the Metropolitan Washington Council of Governments discussed their proposed urban water resource planning project. The project is designed to develop a coordinated region-wide water resource management plan. Operations research approaches would utilize distribution of independently developed population and employment projections throughout the metropolitan area according to postulated development policies. Water supply and wastewater generation models, water distribution and waste collection system models, sediment generation and storm runoff models, and estuarine response models would be utilized in the planning project to determine the resultant effects of public policy on water resource management systems. The use of feed-back would be emphasized in order to develop modifications to the postulated public policy to bring about technical, financial, and esthetic efficiencies in the management of water resources of the metropolitan area. The FWPCA and the Office of Water Resources Research are presently considering Federal financial support for the proposed planning project. It was noted that the Council of Governments' proposal might be evaluated as to its technical scope and that consideration might be given to means of expanding the social-political aspects of the planning process. It was the general consensus that the urban water resource planning project was a desirable approach which should be supported. It was also the only proposal proffered which constituted an adequate response to Recommendation 4.

No effort on the part of any single jurisdiction to date appears to have given adequate consideration to all elements embodied in the charge of the conferees in Recommendation 4, with the exception of the urban water resource planning project of the Metropolitan Washington Council of Governments. At the conclusion of the meeting on October 27, there was an increased awareness on the part of those in attendance of the necessity for such a study as is envisioned in the Council of Governments' planning proposal. There was general agreement that the successful implementation of such a complex planning activity would require active participation and cooperation from all the jurisdictions of the metropolitan area.

There is implicit in the wording of Recommendation 4 a requirement that Federal, State, interstate, and local agencies cooperate in this planning activity. There is room for interpretation as to which agency is to actually direct or lead the planning effort. It is the position of the FWPCA that although it can serve in a coordinating role, it must not conduct the study. Past experience has demonstrated that regional studies done by a Federal agency, rather than by the agencies of the area, are seldom successful in terms of actions being implemented. The FWPCA can, however, be of great assistance to the required planning effort from its various grant programs and by providing technical assistance through a proportionate amount of staff involvement. Any study undertaken, involving the scope envisioned in Recommendation 4. would require substantially longer than the scheduled completion date of

January 1, 1971, although significant programs should be made by that time.

The Metropolitan Washington Council of Governments wishes to submit for the record a brief description of the water resource planning proposal. The Council of Governments' brief also describes how the operations research proposal would provide a mechanism through which the local jurisdictions can actually implement the regional planning program required by Recommendation 4.

(List of Agencies and Organizations Represented at October 27, 1969, Meeting Re: Recommendation No. 4

FWPCA, Middle Atlantic Region

Arlington County

Alexander Potter Associates (Consultants)

Alexandria Sanitation Authority

City of Alexandria

D. C. Department of Sanitary Engineering

D. C. Department of Public Health

Loudoun County Sanitation Authority

City of Fairfax

County of Fairfax

Prince Georges (Maryland) County Health Department

Washington Suburban Sanitary Commission

Maryland-National Capital Park and Planning Commission

Interstate Commission on the Potomac River Basin

Washington Aqueduct Division, Corps of Engineers, Baltimore District

Corps of Engineers, Baltimore District

U. S. Public Health Service

Virginia State Water Control Board

Council of Governments

Maryland State Department of Health)

MR. STEIN: Are there any comments or questions?

MR. JOHNSON: Yes, Mr. Chairman, I have some comments to make.

I want to state, before I make these comments, that I don't want my comments to be construed to mean that I oppose the study that Mr. Colony has mentioned that the Council of Governments has requested funding for. This is not my attempt. I have not had an opportunity to examine this proposal in detail, but I would presume that it would be a good study.

I do question, though, whether or not it satisfies the requirements of Recommendation 4.

The meeting was on October 27, and it was on this date that this proposal of the Council of Governments was distributed. The discussions at that meeting did not lead me to the conclusion that it apparently led Mr. Colony, on Page 4, I believe, of his statement, that it was the general consensus that the water resources planning project was a desirable approach, but should be supported -- that is, if he is referring to Recommendation 4. Otherwise, it probably was the general consensus that it was a good study.

It was also stated on Page 4:

> "It was the only proposal proffered which constituted an adequate response to Recommendation 4."

Now, this is the case, but I think it is also fair to say that this was the first time that the Federal Water Pollution Control Administration had indicated that this Recommendation 4 was being actively pursued.

In the case of my agency, we, because of the initial wording in Recommendation 4, had been waiting for FWPCA to use the initiative in bringing the groups together, the various agencies referred to, to initiate these detailed studies, and this was the first time that this had taken place, which, as you know, was, I believe, last week.

I just want to go on record saying that I don't believe that we are getting at the things that were anticipated by Recommendation 4, and I think we need to.

MR. STEIN: Any further comments or questions? Do you want to respond to that, Mr. Colony, or do you want to wait until Mr. Lentz comes?

MR. COLONY: Mr. Chairman, I would rather let Dr. Lentz present his own view of the proposals.

MR. STEIN: Are there any other comments or questions?

MR. JACKSON: Mr. Chairman?

MR. STEIN: Yes.

MR. JACKSON: I feel that I should point out that I get a similar feeling as to the impression I got at that meeting. I felt that this was certainly an excellent tool, and I thought this was really a proposed method by which we might approach the problems recommended in Recommendation No. 4, not that it was the solution or the answer to Recommendation 4.

MR. STEIN: Right.

MR. COLONY: I simply submit, Mr. Chairman, that the intent was to expose a mechanism by which we might get at Recommendation 4 and reach realistic conclusions meeting the request of the conferees.

MR. STEIN: All right.

Now, you added one other comment. I know that you planners have something, I guess a leg up on the people, who are all the people sitting up at the table, because I wonder what will be said to any of us in response to any particular schedule set up if we came up with this and said that any undertaking involving the scope envisioned in Recommendation

No. 4 would require substantially longer than the scheduled completion date of January 1, 1971.

Presumably, we asked for a study by January 1, 1971. Again, I do not want to appear critical on this, but I think we have people up here who are charged with trying to work operating agencies. I don't believe if we came up with the response, "We can't possibly do the work by the time you told us," every time we were given a job that they would accept it. All of us would be looking to find more suitable employment. When we talk about a time schedule we don't mean the millenium; we mean what can be done by that date. Possibly that has to be kept in mind. Just offhand, we can't say, "We can't possibly do this by this date."

MR. COLONY: Mr. Chairman, I am also an engineer as well as a planner.

I wish to submit that the conferees setting a schedule for the completion of most of these facilities by 1973 or 1975 will lock in engineeringwise and constructionwise the programs commensurate with Recommendation No. 1, and that the future planning for those transfers of the sites and so forth may necessarily have to apply to the longer-range program for the metropolitan area, rather than this immediate action without any delay, awaiting the plans.

MR. STEIN: Mr. Jensen?

MR. JENSEN: Mr. Chairman, I think I find myself somewhat in agreement with Mr. Johnson, that this is a very important project and probably our visible efforts have not been adequate up until this point.

I do know, however, that Mr. Colony and Dr. Lentz have had a series of discussions during the summer, so that he has not been entirely inactive either.

This is reflected in the complexity of the projects which the Council of Governments is proposing. This is not a simple matter either.

MR. STEIN: Well, at the present time, let us hear from Dr. Lentz on this matter.

Dr. Lentz.

STATEMENT OF

DR. JOHN J. LENTZ

DIRECTOR OF HEALTH AND ENVIRONMENTAL PROTECTION

METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

DR. LENTZ: Thank you, Mr. Chairman.

The complete text of my remarks has been provided to the secretary. What I would like to do is run through briefly a summation of what I consider to be the highlights of my prepared remarks, and then it is quite obvious there may be some questions from the conferees, and I will try to respond to those questions.

The Council of Governments, as everyone here, I hope, knows, is the voluntary association of all the elected and Presidentially-appointed officials of local government from the fifteen major jurisdictions of the Washington metropolitan area. Additionally, our membership includes the region's representatives to the General Assemblies of Maryland and Virginia and the Congress of the United States. The jurisdictions participating in the Council of Governments include the District of Columbia; Montgomery and Prince George's Counties in Maryland; the independent cities of Alexandria, Falls Church, and Fairfax in Virginia; the cities of Rockville, Takoma Park, College Park, Greenbelt, and Bowie in Maryland; and Loudoun, Fairfax, Arlington, and Prince William Counties in Virginia. At the present time, our elected officials are responsible to approximately 3,000,000 people in an area of nearly 2,500 square miles.

We hope the information that we have previously supplied concerning expected populations, past expenditures for pollution control, and current sewer service charges, as well as the statement of COG's policies, guidelines and recommendations contained in its April 11, 1969, letter to Mr. Klein, have been helpful to the conferees in their consideration of measures for the improvement of the estuary. A copy of that letter, which also details the composition of the Council of Governments and describes its interest and involvement in planning for the metropolitan portion of the Potomac River, is attached for your information.

Since the last session of the conference, the Council of Governments has completed and adopted metropolitan water and sewage facilities plans and programs, a metropolitan sediment control plan, and a flood damage prevention plan for the metropolitan area. It has also continued to pursue its efforts in air quality management and solid wastes disposal, and is well along toward the development of a metropolitan plan and program for the latter. It has also been active in the water resources field.

The Council of Governments believes that a coordinated attack must be mounted at all governmental levels to enhance the quality of the Potomac Estuary. The conferees have addressed themselves, through some twenty-one recommendations, to the programs necessary for attaining this goal.

Of the twenty-one recommendations agreed to by the conferees at the April 4 and May 8 sessions of the conference, it should be noted that most concern specific actions which will, when implemented, provide measurable relief from the water pollution problems of the Potomac Estuary. However, by themselves, they will not be adequate to meet all future water quality requirements and sewage disposal needs for the metropolitan area. This is true for several reasons:

(1) Continuing explosive population growth will require that increasingly more stringent treatment requirements be adopted in the absence of non-treatment pollution control alternatives. Phosphorus and BOD removals of 96 percent (based on today's population) may need to be increased to 98 percent or 99 percent as the metropolitan population approaches the 7.7 million figure recently projected by a COG consultant for the year 2000.

(2) Conflicting demands on all water resources will make their allocation among competing uses increasingly more difficult. Economic means will need to be found to assure that all reasonable demands for high quality water are met, and that water reserved for such uses receives ample protection at all times.

(3) Competing demands of other urban problems will limit the resources available for pollution control. Housing, crime, transportation, and other environmental protection programs will compete with water pollution control for scarce dollars and other resources.

Dr. J. J. Lentz

(4) Incomplete understanding of natural and social phenomena will tend to limit the range of pollution control alternatives which may be considered and evaluated. Research into the relative efficacy and costs of alternative nutrient removal processes will never cease, but decisions on techniques actually to be employed cannot be indefinitely deferred. Although the FWPCA has been working diligently, we can never know enough about the effects on the estuary of discharges of varying quality and quantity and at alternate locations. Moreover, public reaction to possible specific alternative long-range pollution control plans cannot be determined until these plans have been devised and public reaction solicited.

The Council of Governments believes that a consistent and coordinated urban water resources planning program must be undertaken to respond to these and many other already identified limitations to effective pollution control planning. The conferees concurred in principle to the need for such a program in formulating Recommendations 4 and 14 of the May 8, 1969, session of the enforcement conference.

Recommendation 4 called for the initiation of:

"Detailed analyses of alternative methods of meeting future water quality requirements and sewerage

> "needs in the metropolitan area. These analyses shall consider advances in waste treatment technology; space limitations which prevent unlimited expansion of the District of Columbia and other water pollution control plants; fail-safe sewer systems to prevent raw sewage discharges; possibilities for load transfers to other sewage treatment plants; opportunities for use of reclaimed water; sewers and alternate treatment plants and discharge points for treatment facilities and sludge disposal methods needed for the expanding Washington population."

COG believes each of these points requires detailed study within the context of a comprehensive urban water resources planning process which recognizes the complex interrelationships among population, water resources planning, public policy, and land development patterns. COG has developed a work program designed to permit the formulation of a metropolitan-wide response to these complex interrelationships in water resources planning. Because it relates directly to the water supply-water pollution control problem, COG has jointly submitted complementary parts of the work program to the Federal Water Pollution Control Administration and to the Office of Water Resources Research for support. Because we believe our proposed work program has major implications for future water pollution control activities, and that it provides a positive response to the needs of Recommendation 4, it is described below.

The Urban Water Resources Planning Project was developed in response to the increasing need for coordinated metropolitan water resource planning. It proposes to combine specific individual elements of systems technology into a single planning process which allows consideration of the water resource of a region as an interacting, interdependent aspect of the total natural and man-made environment. Successful application of this technology within a process which is capable of accommodating acknowledged social and political constraints will provide a major contribution to the entire resources planning process for all metropolitan areas in addition to providing specific benefits to the Washington metropolitan area.

As the HUD recognized planning and review agency for the Washington SMSA, the Metropolitan Washington Council of Governments has the general planning background and data base to investigate and understand the people-related problems on which water utilization depends, and, most importantly, is now in possession of a proven population modeling tool which allows testing of alternate public development policies on population growth and distribution patterns.

Using independently developed population and employment projections, COG's population model distributes these projections throughout the metropolitan area according to postulated development policies. Based on these distributions, the planning process will then use, refine or develop water supply and sewage generation models, water distribution and sewage collection system models, sediment generation and storm water runoff models, and estuarine response models to determine resultant effects of public policy on water resource systems, and, through the use of feedback, to develop modifications to postulated public policy which can bring about technical, financial and esthetic efficiencies in the use of available water resources. Throughout the process, planning decisions will be subject to continuing technical and policy review at the local, State and Federal levels within the committee structure of COG. This opportunity to be afforded all of these concerned agencies for continuing participation in the water resources planning process will constitute an important element leading to the success of the project.

Specific elements of the planning project relating directly to Recommendation 4 of the Potomac River Enforcement Conference include:

(1) Development and employment of models to relate population and water use to sewage generation, and to project wastewater generation rates by small areas.

(2) Development and employment of models to simulate stormwater discharges under selected hydrologic, meteorologic and development parameters.

(3) Development and employment of models to simulate infiltration and exfiltration to selected conveyance systems.

(4) Development and employment of models to apply the wastewater, stormwater, and infiltration to all major conveyance systems to meet projected demands.

(5) Development and employment of an erosion and sedimentation model.

(6) Development or improvement and employment of models for evaluation of the effects of waste discharges on the Potomac Estuary.

The end products of the applications of these models will be used as primary input for:

(7) Development of techniques for testing joint interactions of alternative development patterns on water resources development, leading to:

(8) Development of a cost-effective liquid waste management plan, including consideration of the interactions of other development plans.

The Council of Governments feels that the Urban Water Resources Planning Project which it proposes to carry out in conjunction with its member governments and agencies meets the needs of Recommendation 4. Proximate pursuit of the Planning Project Work Program will provide demonstrable progress toward resolving, at an early date, the issues raised by Recommendation 4. COG therefore believes that the conferees should consider the responsiveness of its Urban Water Resources Planning Project to the water resources problems of the region, to the specific requirements of Recommendation 4, and to their own need to formulate long-range pollution control programs; and, to the degree that they find COG's work programs responsive to these needs, COG believes that the conferees should consider endorsement of its contemplated work programs to the FWPCA and OWRR for support as a truly metropolitan approach to the solution of an acknowledged metropolitan problem.

Recommendation 14 called on the Interstate Commission on the Potomac River Basin to provide leadership in the upper Potomac Basin in the pursuit of measures designed to protect the river and estuary, and to secure compliance with State and Federal water quality standards. The Council of Governments supports such a study and stands ready to cooperate fully in its conduct.

In closing, COG continues to urge all local, regional, State, interstate and Federal agencies to continue their efforts to meet all recommendations of the enforcement conference, and it reiterates its willingness to offer support to those agencies in any way that will lead to early achievement of a cleaner Potomac River.

So, Mr. Chairman, I thank you for the opportunity to address the conference.

I think I would be naive to ask if there were any questions, as there do seem to be some. I will try to answer them, if I can.

MR. STEIN: Let's check. Are there any questions or comments?

How much is this going to cost?

DR. LENTZ: This is conceived to be a three-and-a-half-year program, Mr. Chairman. The total figures will approximate a million dollars over the four-year program.

We anticipate needing to spend about $300,000 a year to do this work. It involves a great deal of data collection.

In my presentation, I intimated that we would need to be developing models. In most cases the models are already available and depend on research that has been carried on by FWPCA and supported by FWPCA, or the Office of Water Resources Research, for several years.

What we propose to do is put them together in a single package, and we believe that this is the first time that that will have been done, and tie it to this population modeling tool that we have, so that we can get an output which will in effect give us some indication of the effect on the quality of the Potomac Estuary as a function of where a freeway might be built, for example, and I don't think that this is an exaggeration of what we will be able to do.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: I think the conferees again will have to take this up and move forward with it.

I just speak for myself. Where I would be more encouraged with these studies -- and I know you can do it because you do it when you have to -- but couldn't we have a little more emphasis in your written material than just a simple declarative sentence? I think it might make a bigger impact.

DR. LENTZ: Mr. Chairman, my wife is a high school teacher. Have you been speaking to her in private? She gives me this all the time.

(Laughter.)

MR. STEIN: I know. I'm not sure whether people in the field who are close to this planning stuff really have any notion how their jargon hits other people.

In these reports, I think if we go back very frequently to just a simple declarative sentence, "The boy saw the cat," we will move everything forward a lot more easily.

Are there any other comments or questions?

(No response.)

MR. STEIN: If not, thank you very much.

(The letter attached to the statement of Dr. Lentz is as follows:)

metropolitan washington
COUNCIL OF GOVERNMENTS
1225 Connecticut Avenue, N.W., Washington, D. C. 20036 223-6800

April 11, 1969

The Honorable Carl L. Klein
Chairman, Potomac River-Washington
Metropolitan Area Enforcement
Conference
U. S. Department of The Interior
Washington, D. C.

Dear Mr. Klein:

Thank you for permitting us this opportunity to offer our comments concerning means for bringing about improvement of present conditions in the Potomac estuary. We hope that the information that we have previously supplied concerning expected populations, past expenditures for pollution control, and current sewer service charges has been helpful to the conferees.

The Council of Governments, as you already know, is the voluntary association of all of the elected and presidentially appointed officials of local government from the fifteen major jurisdictions of the Washington metropolitan area. Additionally, our membership includes the region's representatives to the General Assemblies of Maryland and Virginia and the Congress of the United States. The jurisdictions participating in the Council of Governments include the District of Columbia; Montgomery and Prince George's Counties in Maryland; Loudoun, Fairfax, Arlington, and Prince William Counties in Virginia; the independent cities of Alexandria, Falls Church, and Fairfax in Virginia; and the cities of Rockville, Takoma Park, College Park, Greenbelt, and Bowie in Maryland. At the present time, our elected officials are responsible to approximately 2,700,000 people in an area of nearly 3,000 square miles.

The interest and involvement of the Council of Governments in problems of pollution of the River, as we have previously indicated, date back to 1957. In that year, the political leaders of the Council unanimously went on record with a so-called "no effluent" policy directed toward the prevention of sewage discharges into the Potomac River within the metropolitan area above the Little Falls water supply intake. This mandate has been fully honored since that time.

In 1958, members of the Council were instrumental in the earliest planning stages which led to the opening up of the Dulles Interceptor Sewer to serve portions of Fairfax, Loudoun, and Montgomery Counties, thus reducing local dependence on septic facilities.

In 1962, the Council commissioned and received a comprehensive sewerage blueprint from Drs. Abel Wolman and John Geyer, whic has since served as the basis for the planning and construction of sewerage and sewage treatment facilities throughout Metropolitan Washington. Within the past year, the Council has received additional reports prepared by a team chaired by Dr. Wolman directed to the water supply needs of Metropolitan Washington to the year 2010.

The metropolitan planning and review functions provided by COG under Section 204 of the Demonstration Cities and Metropolitan Development Act and under other legislation have further served to encourage mutual discussion and planning of water resources-related projects. The Land Use and the Health and Environmental Protection Policy Committees of COG afford regionwide review by elected officials of proposed projects following initial evaluation within COG by the staff and by the Sanitary Advisory Board and by a similar Planning Directors Committee when appropriate. Parenthetically, it may interest the Conference to learn that even now various committees of the Council of Governments are reviewing reports, either recently completed or in the latter stages of preparation, on regional water and sewer planning and programming, sediment control, flood protection, and sludge disposal. Other COG efforts are directed toward air quality management, solid waste disposal, and general water resources planning. Additionally, Dr. Lentz, our Acting Director of Health and Environmental Protection, very early reported to the Conference on population trends projected for the region in fulfillment of a study obtained by the Council of Governments.

From evidence presented previously and at the Conference, it is clear that the Potomac estuary suffers pollution from waste treatment plant discharges including nutrients, sediment, stormwater discharges, and combined sewer overflows. We are certain that the people of the Washington metropolitan area are dismayed that such conditions exist, and that within the context of other, equally pressing problems, are sincerely interested in alleviating those conditions to the limit of the resources available to them.

If those conditions are ever truly to be alleviated, the local jurisdictions of the Washington metropolitan area, in conjunction with the States and the Federal Water Pollution Control Administration, must find a way to effectively coordinate and finance the installation and operation of fully adequate pollution control measures and facilities.

As we listened to the various viewpoints expressed at the Conference, it became apparent that there was disagreement among some of the speakers that some of the pollution control measures proposed by the Federal Water Pollution Control Administration would be adequate and worth their potentially high cost. This disagreement seems sufficient, by itself, to justify the request made by the Council of Governments, and transmitted to the Secretary of the Interior on March 26, 1969, for continued research into the mechanics and behavior of the estuary. We are pleased to note that the initial Recommendations of the Enforcement Conference reinforced the need for such research, and we would like to reiterate the hope that such research will indeed be undertaken.

However, in addition to making clear the need for continuing research, the proceedings of the Conference also made unequivocably clear the need for action to be taken now to deal with the problems that we have now. The Council of Governments has reviewed the initial unanimous Recommendations of the conferees and concurs in their objectives. The Council further understands that the Conference will reconvene in executive session to develop specific engineering and administration implementation procedures. We believe that the development of those procedures is deserving of very careful attention on the part of the conferees.

For the consideration of the conferees, and in order to be of assistance in the development of specific procedures, the Council of Governments:

(A) Urges the Federal Water Pollution Control Administration and the District of Columbia, Maryland, and Virginia regulatory agencies to consider carefully, to the degree practicable, the needs and requirements of the entire Potomac River and Chesapeake Bay basins, in addition to the metropolitan area, in the formulation of final Recommendations, and to coordinate carefully the establishment of fair and uniform abatement objectives for all collection and treatment facilities subject to regulation.

(B) Proposes to include in the comprehensive plan and program it is preparing for the Washington metropolitan area pursuant to Federal law those Recommendations of the conferees affecting pollution control on which the conferees have been able to achieve unanimous agreement. While we cannot presume what form the final

Recommendations of the conferees may assume, we note that unanimous agreement was achieved in the initial Recommendations on the need to improve sewage treatment, to control sediment, and to minimize the influence of combined sewers and pollutants attributed to run-off. Adherence to a comprehensive metropolitan plan and program containing reference to such matters will then be necessary to assure the continuing eligibility of local governments and agencies for certain Federal funding for a variety of projects under a broad range of Federal legislation, including, among others, the Housing and Urban Development Act of 1965, P.L. 89-117, and the Water Pollution Control Act, P.L. 84-660, as amended. Comment by the Council of Governments concerning the consistency of individual projects with such comprehensive plans is required with respect to all projects subject to review under Section 204 of P.L. 89-754, the Demonstration Cities and Metropolitan Development Act of 1966. The programs subject to this review include, among others:

> Open Space Program, Basic Water and Sewer Facilities, Public Works Planning, Urban Planning Assistance, and Advance Acquisition of Land (Department of Housing and Urban Development); Outdoor Recreation, Waste Treatment Facilities, Irrigation and Reclamation, and River Basin Pollution Control and Abatement (Department of The Interior); Solid Waste Disposal (Department of Health, Education, and Welfare); Rural Water and Waste Disposal Facilities and Planning, Watershed Protection and Flood Prevention, and Soil and Water Conservation Loans (Department of Agriculture); Public Works and Economic Development Facilities (Department of Commerce); and Beach Erosion Control and Flood Prevention (Department of Defense).

(C) Recommends that all parties to the Conference consider the establishment of a mechanism for continuing informal review of pollution abatement progress and plans for pollution abatement plans and programs. We believe that such continuing review will be required to account properly for anticipated changes in population, pollution control technology, and understanding of the estuary as further knowledge of these factors becomes available. We Suggest that the conferees consider the Regional Sanitary Advisory Board of the Council of Governments for this purpose.

(D) Offers its staff and services for assistance in the planning, coordination, and pursuit of further study of the hydromechanics and ecology of the Potomac estuary.

(E) Suggests the development of improved procedures for coordination of the collection and more rapid dissemination of estuary water quality data to the governments and agencies concerned, to plant operators, and to the public. The Council of Governments offers to assist in this program in any way in which it can be of service.

(F) Offers to cooperate with the Interstate Commission on the Potomac River Basin, with local soil conservation districts and with the Soil Conservation Service in the pursuit of necessary sediment control programs.

(G) Encourages all jurisdictions to continue their efforts to secure the passage of a workable interstate compact.

The Board of Directors of the Council acted formally on April 10, 1969, to encourage the conferees to give full consideration to the above items. In conclusion, the Council would like to assure the conferees of its desire to continue to be of assistance and to offer advice, as the official regional planning agency for Metropolitan Washington, in connection with the implementation of whatever recommendations are arrived at by the unanimous decision of the conferees.

Your consideration of our interest is appreciated.

Very truly yours,

Francis B. Francois
Chairman
Board of Directors

J. W. Dixon

MR. STEIN: May we call on Mr. Dixon?

Mr. Dixon, did you want to speak on that report?

STATEMENT OF
J. W. DIXON
CONSULTANT
WATER RESOURCES AND REGIONAL ECONOMIC DEVELOPMENT

MR. DIXON: Conferees and Members of the Audience:

My name is Jack W. Dixon. I am a private consulting engineer, dealing primarily with water resources and economic development.

I reviewed the program and found out that Item 4, which is the present item, is future needs for study, while Item 13 is watercraft pollution regulations. It is about the two of them that I would like to speak.

MR. STEIN: I wonder if you could confine your remarks to Item 4 at this time, sir?

MR. DIXON: Well, Item 4 is future needs for study. I am talking about research, and the subject for the research is watercraft. That is why I thought the two had a relationship.

The Federal Water Pollution Control Agency has objectives with which I agree.

The research which has been done to date has not produced a result which is satisfactory for the use of small carft. I am the owner of a small craft and a member of boating organizations, such as the Coast Guard Flotilla, and I have been a commercial-licensed operator for thirty years, so I know a bit about them.

The presently available facilities are too heavy, don't meet the standards, and are quite inadequate from all standpoints.

The Federal Water Pollution Control Agency has four contracts at the present time in process of research, and a fifth has been discussed, if not already tried out.

I would like to say that the first one that has been tested, in all four of those under operation at the present moment, deals with some manner of holding tanks aboard the boats.

Now, that has not proved a success. The first test made by Congressman Blatnik's committee at the Anacostia Marina here in Washington resulted in his comment, after the conclusion of the test, that, "Well, we've got the law, but we seem to lack the technique."

I am encouraging here today then the study not only for the use in the area under consideration today, but for the general position of the small craft in the field of water treatment that will be satisfactory to meet the requirements either of the standards or of a reduced standard, because, as I understand from the data available, the amount contributed by small craft is much less than one percent of the total.

I think the conferees are doing the right thing in tackling the big polluters first. I hope they will then continue with the small craft use of systems that will meet some appropriate standard, but research is essential and it is not yet adequate.

One of the newer ones being considered is to burn the effluents with propane gas. If you will consider your insurance rates on boats with propane facilities in them, you will find that they are several times as high as if they have alcohol stoves and other approved types of facilities.

You can't even drive a trailer through the Baltimore Tunnel if it has propane on it. I keep my propane bottles outside my house.

My hobby is really boats. Therefore, I should like to encourage, and will be glad to participate in any way I can, in accomplishing any reasonable objectives towards facilities for small-boat users.

I would mention in that connection, here is the District of Columbia booklet on "The Potomac-People-Pollution," which is somewhat misleading in that it shows for smaller boats a doubling in number from seven million to fourteen million, and in very small print, if you can read it, it means for the entire

United States.

So, I think we will have more than our share, or at least our share, in the Potomac-Chesapeake Bay area.

That furthers the necessity for the research necessary in this field for this zone and area that we are discussing this morning, and all of the other zones under the jurisdiction of Maryland and Virginia.

Recently I took a 380-mile trip on my own boat --

MR. STEIN: Mr. Dixon, I'm afraid you are getting off the topic. We let you speak on Item 4, and you have certainly gone to Item 13.

I don't want to be mean, but, please, confine your remarks to the item on the agenda, or we will have to ask you to stop, because we all want to get to lunch.

MR. DIXON: I agree with that objective, sir. I am talking about Item 4, which is future needs study. I am talking about that part of it.

MR. STEIN: About how much longer have you got to go?

MR. DIXON: About half a minute.

MR. STEIN: All right.

MR. DIXON: The holding tanks facilities, which is now the primary one apparently under consideration, is not satisfactory. It has proved to be unsatisfactory, and I should like again to urge the conferees to join with the FWPCA to expedite and enlarge the scope of research necessary for the small-craft problem.

Thank you, sir.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, we stand recessed until a quarter to 2.

(Whereupon, at 12:15 p.m., a luncheon recess was taken until 1:45 p.m.)

AFTERNOON SESSION

(1:50 p.m.)

MR. STEIN: Let's reconvene.

The next item on the agenda is "Combined Sewers and Stormwater."

RECOMMENDATION NO. 5

COMBINED SEWERS AND STORMWATER

MR. STEIN: We will hear from the District of Columbia first.

MR. JACKSON: Mr. Chairman, in response to Recommendation No. 5, I would like to make the following statement:

You recall, this had to do with respect to stormwaters and collection.

Recommendation No. 5 pertained to the completion of Project 'C.'

Construction is now proceeding on the section of the Project 'C' interceptor tunnel in the Lincoln Memorial area, and the last connecting section in the Georgetown area, previously delayed because of indecision on highway river crossings is under design. These projects are proceeding satisfactorily and the 1971 completion date should be met without difficulty.

The District of Columbia continued to cooperate with FWPCA-sponsored research on combined sewer overflows and quality of stormwater discharges. The preliminary findings indicate that stormwater runoff from urban areas may be polluted seriously enough to require treatment. We have, therefore, begun to make some preliminary estimates of the cost of a tunnel system which would collect and store combined sewage overflow and stormwater runoff resulting from a storm of a 15-year frequency. These estimates indicate that such a tunnel system would cost $1.2 billion at 1969 prices. The Department is staggered by cost estimates of this magnitude and it becomes quickly apparent that the District of Columbia cannot finance these types of expenditures without significant assistance from the Federal Government.

That is my statement, Mr. Chairman.

MR. STEIN: Are there any comments or questions?

(No response.)

MR. STEIN: You know, really, Norm, I've got to give you credit. You are the master of understatement.

All the people who have been living around here know the problems we have been having concerning where the bridge crossing will be, whether it will be over Three Sisters Island or not. Here is how it s covered here: "Previously delayed because of indecision on highway river crossings."

You should be in the State Department.

MR. JACKSON: Mr. Chairman, I have nothing to add to this statement. I'm sorry.

(Laughter.)

MR. STEIN: Let me ask: Are you committed to this tunnel business or is there an alternative? How about those rubber balloons we saw?

I know that some of the cities like Boston and Chicago talk in terms of tunnel storage for stormwater. I agree with you, the costs are staggering, but isn't there another alternative to this kind of tunnel system which might cost a little less?

MR. JACKSON: Mr. Chairman, we are certainly not committed at this point. We are looking at all possible alternatives, and I think, as you know, this kind of expenditure is so large that we must look at all possible alternatives.

A deep-tunnel method seems to offer some possibilities in that it is at least underground. Whether we might be able to have surface to build it, what's down underneath all of this, it is a little bit hard for me to imagine, for instance, surface holding reservoirs of the size that it would be necessary to have to look at as an alternative method on the service, let's say, so that the deep-tunnel method certainly has some possibilities.

Our initial estimate is that it would take, I think, about forty miles of underground tunnel in the neighborhood of 33 feet in diameter.

I'm sorry; I cannot compare this in terms of what is going on in Chicago. That is probably more expensive than this . I would simply compare it, for instance, with the Potomac interceptor, which is a regular interceptor sewer, where we had some forty miles of pipeline extending up to the Dulles International Airport.

But, of all the current methods now, this seems to be at least worthy of initial investigation.

MR. STEIN: How about Kingman Lake? Have you considered that?

MR. JACKSON: As a method of handling stormwater overflow?

MR. STEIN: Yes.

MR. JACKSON: Well, I think reference was made this morning to this. Perhaps it was Mr. Hope who made reference to this plan, which I think we heard about for the first time two weeks ago. I had some indication of it.

But this, I believe, is going to be very small in terms of handling the entire flow from the tributary area, and I don't know enough about it at this time to comment with any degree of enlightenment.

We are in touch now with FWPCA, Mr. Rosenkrantz, and we will be in further touch in the future.

MR. STEIN: With the Anacostia River, have you considered putting these Zeppelin-type affairs out there? How many of those would it take, if you used the Anacostia, or is that out?

MR. JACKSON: I think you are referring to the bag-type of catchments?

MR. STEIN: Yes.

MR. JACKSON: We have never been particularly impressed with this as far as our particular problem is concerned.

Our problem is of such scale that it does not look like a feasible method to even tackle it.

We did cooperate, as you know, in looking into this, but I believe I have to have considerable reservations about this as an alternative for the District of Columbia problem.

MR. STEIN: Just for the record, if we go through with Plan 'C,' what is that going to do with stormwater overflow when that is completed? That will ameliorate it quite a bit, won't it?

MR. JACKSON: It will help, Mr. Chairman. We are, through this project, attempting to treat up to five dilutions, which means that this will be diluted five times, and it will be of considerable help.

When we get through with the separation portion of Project 'C' in the upper Northwest, this will mean that we will have all of the pollution under control from Key Bridge upwards, but we still have overflows beyond five dilutions that will have to be handled.

In other words, Mr. Chairman, although we have addressed ourselves to the problem of separation and stormwater overflows and to Project 'C,' we are only beginning to approach the problem.

MR. STEIN: Yes.

MR. JOHNSON: Mr. Chairman?

MR. STEIN: Yes, Carl.

MR. JOHNSON: Could I ask Norm, can you relate the five times dilution to flood flow frequency?

MR. JACKSON: I don't believe I have the exact figure on that. It is related to a 15-year storm, I believe, and possibly one inch of rainfall, but I would have to get that to be more specific on that, Mr. Johnson, for the record.

I could provide that, if you feel that is necessary, for the record.

MR. STEIN: When we had the first conferences in the fifties, it was agreed that the District, whenever they would have an urban renewal problem or program, would effectuate separation of the sewers when they had a street ripped up for other reasons, or tore buildings down.

Can you indicate to us how that program is proceeding?

MR. JACKSON: That program has proceeded very well. We have changed the building code of the District of Columbia so that when any new building is built, its internal piping must accommodate itself separate to us, so that it is in the plumbing code, and we have that there for the future.

I might answer the balance of your question by saying that in the urban renewal Southwest problem, where the whole area was leveled and we had an opportunity to go in full-scale and separate all the systems in that area, we have no combined overflows at that point, and the Washington Channel certainly reflects it.

MR. STEIN: Yes. Let me ask one question, and this may be just for me.

Given the topography of the District and what we know existed here in the underground situation of the land in the kind of area the District is built on, which essentially was swampland, and having Tiber Creek and stuff running through it, are there going to be any engineering problems, considering that land, with a deep-tunnel operation, or is it entirely feasible from an engineering point of view?

MR. JACKSON: Mr. Chairman, I couldn't even attempt to answer whether there would be engineering problems. There have been no subsurface explorations.

Engineeringly, it looks like a feasible method from a general first approach. But as to the exact application within the District, our engineering people and others would certainly have to look into this, as to whether it is engineeringly feasible.

We think it is if you have got enough money, but I have to beg that question at the moment.

MR. STEIN: Well, you say if you have enough money. I saw what was done when we built the foundations for the Rayburn Office Building to that land. You know, it boggles the imagination if we are going to run into that same thing to build an underground tunnel, and I wonder if we are going to get into the same kind of problem.

MR. JACKSON: If we are using that as an example, because we continually hear about the Rayburn Office Building, and I suppose we will for years to come, but I think even on that basis, that if we have proper engineering investigation and subsurface exploration, we would be able to answer that question before we got into it.

MR. STEIN: Right.

Are there any other questions or comments?

(No response.)

MR. STEIN: If not, thank you very much.

MR. JACKSON: Thank you, Mr. Chairman.

MR. STEIN: May we call on Maryland?

MR. BINGLEY: Sewer overflows in Maryland mainly result from stoppages, breaks, or other malfunctions in sewers. In Montgomery County there are no known illegal stormwater connections to the sanitary sewers. However, there probably remain some old areaway drains and roof leaders. One stoppage created serious pollution of Cabin John Branch before it was located and corrected by the Washington Suburban Sanitary Commission. In Prince George's County, the subdivision areas of Caltor Manor and Crestview have sanitary sewage connections to storm sewers, which are now being eliminated by new sanitary sewer extensions and local enforcement of connections to these sewers.

Maryland has a question on that. I would point out that the Health Department had no knowledge of these illegal connections to storm sewers.

Difficulties with illegal connections, such as rain leaders, infiltration of ground and stormwater into sewerage systems, exfiltration, vandalism of manholes, damage to pumping stations and sewage collection systems, are all problems which tend to contribute to the failure of such facilities. The State Health Department is concerned with the development of recommended criteria for the design of sewage collection and transmission facilities so as to eliminate or reduce water pollution caused by failure of such facilities to convey all sewage to treatment plants. The State of Maryland, for over twenty years, has not approved combined sewers.

Overflows at pumping stations have been generally eliminated by programmed relief and interceptor sewers such as the Cabin John and Rock Creek sewers and by new or enlarged pumping stations, to reduce overloads at existing stations such as the Bock Road Pumping Station. Power outages remain a problem in connection with pumping station overflows in the bi-county area. This question has been taken under advisement by the Regional Sanitary Advisory Board, which has been discussing means of providing for auxiliary power at some installations.

There are no known combined sewers in the area of Maryland tributary to the Potomac River area under discussion. A strong plumbing code is administered by the Washington Suburban Sanitary Commission, in both Montgomery and Prince George's Counties, which issues permits for and inspects all such plumbing operations. Potential illegal connections to sanitary or storm systems are thus prohibited.

To obtain some background of existing water quality in the streams of the area which will assist in determining the effect of stormwaters in these streams and will furnish data on the ambient water quality, each county has a program of stream sampling. In Prince George's County, this consists of a team within the local health department, which operates on a full-time basis, sampling streams, ditches, and other watercourses in the county. In Montgomery County, such activity has, in the past, been limited to the Rock Creek watershed. However, Montgomery County is preparing to activate a strong program of stream sampling throughout the county, beginning July 1, 1970, and has now programmed in its budget arrangements to implement such a program.

MR. STEIN: Are there any questions or comments?

MR. JENSEN: Mr. Bingley?

MR. BINGLEY: Yes, sir.

MR. JENSEN: May the last paragraph in your statement be interpreted as meaning that the Montgomery County area, at least, is taking the first step towards determining the effects of stormwater runoff on quality -- that is, it is a first step in deciding what, if anything, needs to be done to correct this problem?

MR. BINGLEY: I would say the answer to that, Mr. Jensen, is yes, in the State of Maryland.

As you know, studies have been made on stormwater overflows. We had very, very vague results in Baltimore City in measuring runoff into storm drains.

MR. JENSEN: At the previous conference, the conferees found that they really didn't have enough information to deal adequately with the problems of storm flows, and consequently our Recommendation No. 5 perhaps does not go as far as we might like it to go. It tends to deal with combined sewers, where I think that every one of the conferees realizes that sooner or later we must deal with the total problem of storm flows for the entire metropolitan area.

I was just trying to see if this final paragraph in your statement indicates that at least in Montgomery County they are moving in that direction.

MR. BINGLEY: I think yours is a very valid statement, Mr. Jensen. Yes.

MR. JENSEN: My second question, then -- I guess I didn't say there were two.

MR. BINGLEY: You cheated on me.

(Laughter.)

MR. JENSEN: It sort of relates to the plans of the Washington Suburban Sanitary Commission.

To the best of your knowledge, have they initiated studies as yet in their service area on the effects of stormwater on stream quality?

MR. BINGLEY: I have no knowledge of any such study. No, sir.

MR. JENSEN: Would this properly be included in this entire plan that must be submitted to your agency?

MR. BINGLEY: No. Actually, the ten-year plan is concerning water supply and sewage, and does not mention stormwater per se.

MR. JENSEN: Thank you.

MR. STEIN: You know, I am intrigued by your statement about potential illegal connections to sanitary systems. That is on Page 2.

Supposing there were one. That would not contribute to pollution because it would be going to the plant, wouldn't it?

MR. BINGLEY: We don't want stormwater connected to sewage going to a plant, if that is what you mean.

MR. STEIN: You mean, the illegal connection of stormwater to a sanitary plant?

MR. BINGLEY: Sure. This can only result in a tremendous volume of flow. That is what I mean.

MR. STEIN: Yes, but how often do you get an illegal connection of stormwater to a sanitary sewer? Can't the sewer handle it?

MR. BINGLEY: Mr. Chairman, I venture to say that there is a whale of a lot of stormwater getting into sanitary sewage today everywhere.

MR. STEIN: Possibly by infiltration?

MR. BINGLEY: Because the householder, or the builder of the house, will make a connection of the roof leader to a sanitary sewer. There are a heck of a lot of them still being done and to catch them is the devil's own job, so it does happen.

MR. STEIN: Right.

Are there any other questions?

(No response.)

MR. STEIN: Thank you very much.

May we have Virginia?

MR. PAESSLER: The Virginia political subdivision that must comply with Recommendation 5 is the city of Alexandria. At this time the city of Alexandria has received from an engineering consultant a proposal to develop a solution to the combined sewer overflow problems now being experienced. The solution to the combined sewer overflow problems is not unique to the Washington metropolitan area, nor are the problems of economics involved in developing engineering design. We would expect that prior to the next reconvened session of this conference the city will have retained an engineering consultant and charged him with the responsibility of having available by the indicated deadline the necessary plans leading to solution of the problems caused by the combined sewer overflows. This conference may rest assured that if, in the opinion of the State

Water Control Board, sufficient progress is not made in the next few months, we will institute the necessary action to insure that progress will be forthcoming.

MR. STEIN: Are there any comments or questions?

MR. JENSEN: Mr. Paessler, may I ask you the same question I asked Mr. Bingley?

Was it your understanding from our previous meeting that the conferees were concerned also with storm flows as such as a potential pollutant?

MR. PAESSLER: I tried to remember that when you asked Mr. Bingley, and I drew a blank for the time being.

I would say that we certainly ought to be, if we were not.

MR. JENSEN: Thank you.

MR. STEIN: Are there any further comments or questions?

(No response.)

MR. STEIN: If not, maybe this is as good a time to say this as any, because when we were at the last conference, Mr. Paessler, I said where I lived we would have been delighted to connect to a sewer if we had one.

I am pleased to report the sewer is working its way slowly up my block now, except they have a sign there and it says, "Sewer construction for a cleaner Potomac," and that is what

I don't understand, because we are going into a septic tank now and we are sure not contributing to the pollution of the Potomac. I wish I could be that sure after we put the stuff into the sewer.

MR. PAESSLER: It is probably going to add some load.

MR. STEIN: That's right.

MR. JACKSON: Mr. Chairman, might I make a comment?

MR. STEIN: Yes.

MR. JACKSON: To tie together some of the thoughts we have vis-à-vis the stormwater problem and what it brings, and also the sewage treatment plant effluent problem, I think it would not be wrong to say, and I would not be in error to say, that if all of the treatment plants in the Washington metropolitan area did one hundred percent removal of BOD, suspended solids, and we had advanced waste treatment in effect in every water pollution control plant in this area, we have not attacked the problem of water pollution control, because there remains then the surface runoff in addition to the combined sewage in this area.

These two together constitutes as big, if not even larger a problem, as far as water pollution control is concerned, as the sum of the problem of all of the water pollution control plants.

MR. STEIN: I couldn't agree with you more.

By the way, what Mr. Jackson says here may be the crux of the problem we are facing. If we persist in saving the United States from Boston to Richmond and we are going to have to deal with all that runoff when it rains, and they are all going to hit the streams at the same time, no matter what we do with the wastes we collect through the regular dry weather flow and our systems, unless we take care of this stormwater overflow you are not going to have clean streams.

You know, we have been dealing with a very interesting figure here for a long time, and this has gone on possibly for several years since we have had the first conferences in the 1950's and the works have been put in Virginia, Maryland and the District.

From time to time, during the summer, particularly if you take it as an average, and you check the coliform bacteria, we have found that you might have coliforms which may have been below on the average than you would have in a tremendous swimming place like Coney Island in New York. The question is, can you swim in this place?

Well, there are many answers for swimming in the Potomac. One, it is so dirty that if you get under the water and you are in distress, no one can see you, and it is dangerous . But the other point is, if you indicate that something is safe for swimming, it is just as safe as long as we don't have a rain.

As soon as it begins to rain and you get these stormwater overflows, no matter what we do, you are going to have this problem.

I think Mr. Jackson's comment not only is applicable to the Washington metropolitan area, but it is applicable in practically every metropolitan area in the country, and particularly in the Northeast that we are concerned with here, because, unless we meet this problem, we are really not going to get the waters up to the kind of uses that the people expect.

As Mr. Jackson pointed out, his preliminary estimates on dealing with the stormwater problem present a fiendishly expensive solution. This is one of the areas that we are going to really have to apply ourselves to if we are going to come up with clean water.

MR. PAESSLER: Mr. Chairman?

MR. STEIN: Yes.

MR. PAESSLER: I would like to put that in just slightly a different way, because I believe it is something that ought to be impressed on everyone's mind.

If all of this abatement program that is being proposed here goes through and the many hundreds of millions of dollars are spent for it, it only means that the Potomac is going to be a clean stream as long as it does not rain, and then for a certain length of time, until the tide can carry it away after each rainstorm you are still going to have a Potomac that does not have the quality objectives that are being sought here.

MR. STEIN: Are there any comments?

(No response.)

MR. STEIN: I think that is stated as succinctly as you possibly can, and I endorse every word that Mr. Paessler says, because I think this is going to be the key to the problem, and we are really not going to get a clean river unless we handle it.objectively.

May we go on to the next topic, and that is the Piscataway Sewage Treatment Plant.

RECOMMENDATION NO. 6

PISCATAWAY SEWAGE TREATMENT PLANT

MR. STEIN: I will call on Maryland.

MR. BINGLEY: May I make just one comment, Mr. Chairman?

I understood you to say a minute ago that you would welcome a connection to a community sewer. Unfortunately, we have a lot of citizens in the State of Maryland who don't welcome such connections, because they claim, "I've got $300 in the septic tank, it's working all right, and I don't give a hang whether the sewer is in the street or not. I don't want to connect if it is going to cost me money."

So I wish we had more people like you.

MR. STEIN: Well, maybe you have different soil in Maryland, but the way we have to pump our septic tank out, I think I will be ahead when we connect.

MR. BINGLEY: Don't worry; so will the boys in Maryland.

This item, Recommendation 6, concerns the advanced waste treatment plant.

The Federal Water Pollution Control Administration has made a Federal grant offer of $2,400,000 to the Washington Suburban Sanitary Commission for the design and construction of a 5 mgd capacity treatment plant to demonstrate chemical precipitation, recarbonation, filtration, adsorption, lime recovery and activated carbon regeneration in attaining high efficiencies in the removal of phosphate, BOD refractory organics and suspended solids.

Those statements are taken from an agreement between the FWPCA and Washington Suburban Sanitary Commission. They are not our words.

The design of the advanced waste treatment plant began in September, six weeks ago, and it is anticipated the project will be ready for bids in April 1970, with completion in the fall of 1971. We have been informed by the Washington Suburban Sanitary Commission that the Federal Water Pollution

Control Administration had originally considered the advanced waste treatment plant would provide for removal of both phosphorus and nitrogen. Research activities elsewhere in nitrogen removal were considered adequate and the plant design at Piscataway was revised to study the removal of phosphorus only.

Earlier this year, the enforcement conference arrived at recommendations for Zone II of the Potomac Estuary: 80 percent removal of BOD, 86 percent removal of phosphorus, and 76 percent removal of nitrogen.

This compares, as you know, with 95 BOD, 95 phosphorus, and 85 nitrogen, as I recall. Is that right? I'm not sure.

The large sum of money in excess of $3,000,000 being invested in the advanced waste treatment research project will lead to the development of the most practical and economical manner of removing phosphorus at the Piscataway plant. It appears reasonable and proper to conduct the research work before proceeding to the design of treatment facilities to remove phosphorus from the entire flow of the plant which is now being designed for expansion to a 30.0 mgd capacity. The operation of the advanced waste treatment facility will, by the middle of 1973, provide adequate information for the design of phosphorus removal processes. This would then permit the construction of facilities for removing phosphorus and the process for removing nitrogen, based on research work elsewhere, by late 1975.

You will recall that we said the plant would go on stream in the fall of 1971. Eighteen months later, we are saying that we should have adequate information to design the 30 million gallon advanced waste treatment plant for phosphorus and for nitrogen.

There are two things in addition to what is written down here:

1. I have been informed this morning by the Washington Suburban Sanitary Commission that the contract that commission has with the Federal agency was a five-year contract, allowing two years for construction and three years for operation to develop phosphorus removal facilities.

I would further call to your attention a statement made in the meeting in April, where following construction schedules of certain facilities, the memorandum stated:

> "It is recognized that the design and construction of facilities of this complexity may result in many technical and financial problems which may require modification of the above dates. These problems will be considered at the periodic progress meetings."

In our judgment, this is a situation where some modification is highly desirable in order to spend a dollar for future phosphorus and nitrogen removal to the best advantage, particularly in view of the fact that this is public money.

Thank you.

MR. STEIN: Thank you.

Are there any comments or questions?

MR. JENSEN: Mr. Chairman, I would like to suggest that the record be corrected slightly.

The conferees have not as yet adopted BOD, phosphorus and nitrogen values for Zone II of the estuary. We had hoped that we would, by this time, be able to have recommendations that we could present to them which would give us an idea of the total number of pounds of these materials which could be accepted in Zone II.

For a variety of reasons, we have not been able to follow through on this, and Mr. Aalto did not present recommendations for these values for Zone II.

MR. STEIN: Does Zone II involve the mainstream, or the embayment?

MR. JENSEN: It involves that portion of the Potomac Estuary, the mainstream of it.

MR. STEIN: The mainstream.

Again, I want to put the spotlight on this. If you are talking in terms of Zone II, meaning a discharge into the mainstream of the Potomac, as far as I can see, the Piscataway plant does not have a permit to put into the mainstream, and they are required to go into an embayment.

Now, if you go into the embayment, your requirements are quite a bit higher. Just the notion of talking about Zone II as if you are making the assumption that this permit is going to be granted to go across parkland to put it into the mainstream is an assumption which may or may not be warranted, and I don't know that the conferees can make a judgment on this basis.

I hope we are talking about the same thing here.

MR. JENSEN: Well, the recommendations of the conferees on the degree of treatment to be provided if the plant discharges into the embayment are very clear.

MR. STEIN: Right, and that is not reflected here.

MR. JENSEN: No, sir.

MR. STEIN: In other words, any kind of an assumption like this would mean that a permit is going to be granted to discharge into the mainstream of the Potomac. It may be premature to say that.

MR. BINGLEY: Maryland still has hopes, Mr. Chairman, that the Federal Government, the Department of the Interior and its National Park Service, will agree to the laying of a pipeline from the plant to the Potomac River in the interest of saving taxpayer money, and in the interest of doing as acceptable a job at a lower cost.

Now, this is hope, I grant you, and I don't mean Malcolm.

(Laughter.)

MR. STEIN: Well, Malcolm Hope we can depend on. I don't know about the other thing.

(Laughter.)

MR. BINGLEY: This relies more on the Federal Government activity than anybody else, as I see it.

MR. STEIN: I understand, but I think we are going to hear from a lot of other people later, and there may be other interests in this.

Again, let me try to put it to you in this way: Water pollution control is just one of many activities in this country, and we are not going to sway the whole body politic, or swing everything for the advantage of water pollution control. We have to consider other interests and other factors.

We have always done this in water pollution control, and I think we have to arrive at the conclusion -- and maybe we are coming up with two here -- that if we are going to put the wastes from the Piscataway treatment plant into an embayment, there are certain restrictions that we have come up with at the first conference. These restrictions relate to two areas: One, a high degree of treatment, which is necessary even under present conditions, and if you are going to expand the loadings, it is even going to be higher, because we are dealing with an absolute there in a limited volume of water.

These are the facts that have to be faced, and I don't think we can base any assumption now that we are going to have a discharge, at least at the present time, from the Piscataway plant authorized into the Potomac.

I have not seen that authorization yet, and while we may argue one way or the other on that, we are not sure how that is going to be decided.

Are there any other comments or questions?

(No response.)

MR. STEIN: May we hear from Mr. Viehoever on this matter?

STATEMENT OF
DR. ARNO VIEHOEVER
CONSULTING BIO-CHEMICAL ENGINEER
1101 MARINER DRIVE
OXON HILL, MARYLAND

DR. VIEHOEVER: Mr. Chairman:

I appreciate very much the opportunity to make a few remarks.

I live near Piscataway and have, more or less, for over fifty years, and I know the problems that confront you, particularly with the estuary bringing back some of this mess into not only the upper part of the river in front of the Piscataway Bay, but into Piscataway Bay.

I definitely understand thus far that no permit has been given, and some of us think, why should it? This is actually against the law to introduce into a river material that is polluted, and particularly polluted with fecal matter, with virus, with bacteria that will cause disease, etc.

Now, one pipe wouldn't do it with a plant of 30 million gallons a day, or possibly more, as has been said, 150 million gallons, so the problem of quantity to be treated certainly enters into it, particularly where we are told that the demonstration plant will only provide for five million gallons a day, where by 1973, 1974 and 1975, 30 million gallons are expected to be operating.

I don't see the logic of operation of the plant, which is actually fooling the people, that what they are getting for their money is adequate.

Sir, I would bring to your attention in the few minutes that you permit me, the very fact that we do not adequately utilize the magic power of ozone. I shall bring to your attention, if you have not seen them, these two publications presented by a Paris concern, that has been able for several years now to handle over 200 million gallons of river water. They also have handled fecal matter, and fecal matter has been handled with the use of ozone adequately in a pilot plant, 65,000 gallons, on the outskirts of London. It has been handled on a small scale in Coral Gables. It is being handled now in New England at Plainview. It has been handled for thirty years in a city using the waters of Lake Michigan in Indiana.

So, there is collected information available on ozone.

France did this fifty years ago. When we decided on chlorine, they decided on ozone. Today in France there exist over 250 plants using ozone in the treatment of wastewater, or river water, or lake water. The City of Nice has had an ozone plant, a treatment plant, for over fifty years to supply the city. Other parts of Europe have 140 of these ozone plants, mainly to remove the odor of the fecal matter. Russia has it.

I am amazed that in the latest publication available from the Federal Administration, having been farmed out, no reference is given to the last three, four, and five years of work in this very field. Fortunately, they have come up with positive results.

They have asked -- now, mind me, please -- have asked for a pilot plant to be erected in Blue Plains for $636,000 to test what ozone might do. We have the facts. If we go into the literature, we have them. I show you here where it goes into detail. It is in French, but this can be translated, and most of it I have already myself translated. It is done by the chief engineer of the plant, who is also the president of the operation unit.

I have distributed here these two pamphlets. It is over two million thousand gallons a day.

Now, can we sit by and see the question discussed as to what our own unit will do from Hyattsville to rid this problem in Piscataway? They could certainly go into the ozone, which is very quick-acting and which takes the odor away, the color, and the taste, and which oxidizes very rapidly because it is potentiated oxygen. It takes care of the virus. We have nothing else.

Mr. McKee will support me. I have asked for virus treatment for years. Now, with ozone, we have it. Polio, hepatitis -- it is a wonderful thing, but we must use it.

It does no good to put it into a little pilot plant. We must use it.

Furthermore, it takes care of other things. There are other advantages, and I would say particularly economics has been amazingly improved. It has been said from such works in England and Scotland that the equipment cost has been actually found to have been cut in half. The operational expense takes about one-quarter. It may change, of course, but why we have to have another pilot plant that takes at least, even according to the estimate here, a year and a half to build, and then we have to play with the problem, I don't know.

All you need to do is go to Chicago and Hanover, and they have phosphorus removal, and they have nitrogen removal on a big scale. Of course, Chicago needs it, and they have to pay for it. They have the plant operating, and it is published, but more so, why don't we go even in this country and see the whole operation which has phosphorus removal and which has nitrogen removal?

Ladies and Gentlemen, it's funny. You come to this country as a young man and think this is paradise, and you see competitive operations, you see practically closed eyes to the opportunities. Our engineers can do anything, but they have to depend on local activity and also on information.

It is amazing what has been done. In Canada they have over twenty plants. Quebec has a new plant operating on ozone, and there are nineteen other plants in Canada.

I hope I have not talked out of turn, gentlemen. I hope to see through my short lifetime left actually a recognition of what ozone has done today in removal of pollution with the magic of ozone.

Of course, we also have microphysicis and additional means. There have been eleven recent patents, one in this country, so they have been improved.

I mean, you have got to learn what other people have done who had similar needs, but they had the similar needs years and years before we had it, and I would certainly think that if you appoint a committee that will go abroad and see it at close hand, you would say, "How could we have spent $600,000 to even start with to build a pilot plant?"

Thank you.

MR. STEIN: Why don't you wait a minute, Mr. Viehoever? You know, if we appoint a committee to go abroad, I'm going to suggest myself as chairman.

(Laughter.)

MR. HOPE: I volunteered first.

(Laughter.)

MR. STEIN: Mr. Viehoever, do you live in Maryland?

DR. VIEHOEVER: Yes.

MR. STEIN: Are you suggesting that discharges of the Piscataway effluent to the Potomac in a main channel is against the law? What law is that against, Maryland law?

DR. VIEHOEVER: Just a minute, sir. I believe I brought it with me. For once I used clairvoyance.

MR. STEIN: What do you say this is against, Maryland

DR. VIEHOEVER: Yes, sir. (Handing paper to Mr. Stein.)

MR. STEIN: Oh, this is Maryland law, right?

DR. VIEHOEVER: Piscataway, Maryland.

MR. STEIN: What you have shown me is the public law of Maryland.

Now, if you say this is against Maryland law, are you suggesting that W. McLean Bingley of the Maryland State Department of Health, a State Representative, who proposed this pipeline across, is proposing something against his own State law?

DR. VIEHOEVER: Well, sometimes you interpret law to suit your needs, sir.

MR. STEIN: That's my business.

(Laughter.)

Well, in other words, you are not so sure it is against the law?

DR. VIEHOEVER: I am deadly sure, because I know what is in it.

I suffered myself from polio, sir, for years. I still suffer from it. I know what it is to be inflicted with something that could have been prevented.

MR. STEIN: Well, I know this, but, sir, you know, we are making a public record here, and I think it is a very serious charge to say that any State official is proposing something that is against the State law.

While we may have similarities or differences of opinion with the people in the State and interstate agencies involved here, at least I have the notion that we are all proceeding in good faith, and I think the States are proceeding according to the laws of their State, and the law of the land.

I would not expect that any one of the conferees here would propose anything that he believed would be contrary to State or Federal law.

DR. VIEHOEVER: May I remind you, sir, irrespective of the law, we do know that virus occurs in fecal waters.

We know now that we have two means. One is filtering the material through a colloidal resin-type material from Monsanto that will remove the virus, and the other one is to treat it with ozone.

MR. STEIN: I can understand your position there, irrespective of the law, but I still think that, as far as I can see--and I have no reason to doubt this on the basis of reading this--that Mr. Bingley's proposals are entirely within the scope of the Maryland law and authorized by Maryland law. I don't see that he is making any proposal that is prohibited by Maryland law.

You may not feel it is desirable -- that is one thing -- but it is another thing to talk in terms of an official proposing something which is against his State or a Federal law, and I don't think that has been done.

DR. VIEHOEVER: May I call attention to the fact that now Hyattsville agrees to use oxidation ponds, even as a temporary measure, so that there is a certain amount of purification through time and exposure and biological control?

Today we have to have biological and biochemical control of our wastewaters, and that is an absolute must, and I feel that it is possible with Piscataway particularly, if it is followed by ozone.

MR. BINGLEY: Mr. Chairman, may I just make one comment here?

MR. STEIN: Yes, sir.

MR. BINGLEY: Because I don't want to go to jail on this deal.

MR. STEIN: Not as far as I am concerned.

MR. BINGLEY: It does say a $200 a day fine, so I don't want to pay that either.

I submit to you, sir, that this law was promulgated originally in 1886. It has been amended some six or eight times. And since 1914, 55 years, the State Department of Health has issued permits for sewage treatment facilities, and I submit that if this law was being violated, somebody would have caught somebody in the last 55 years. So, frankly, sir, I don't like your accusing me, or anybody on our staff, by saying that we are deliberately violating the law.

DR. VIEHOEVER: Might I make one final statement, sir?

MR. STEIN: Surely. Go ahead.

DR. VIEHOEVER: If our drinking water or our wastewaters are polluted so that it may carry epidemics in germs, admittedly so, whether we have law or not, it is unthinkable that we foster the distribution of such waters.

Fortunately, this last decade has been the awakening of doing something about it. This pollution should never have existed in the first place. I have lived on the Potomac since 1917, sir. In 1935, when the Blue Plains plant came in to be built, I no longer could swim in the water. My children could no longer swim in the water. It was polluted. Whatever we tried -- even the mayor, who works alongside of the Blue Plains plant, tried to have something done about it.

You know, there is a saying that started years and years ago, "I should worry." That's it, "I should worry."

MR. STEIN: Any further comments or questions?

(No response.)

MR. STEIN: If not, let's hear from Mr. Robert Ware Straus on the Piscataway.

STATEMENT OF

(sic) ROBERT WARE STRAUS

ACCOKEEK FOUNDATION

505 SCHOOL STREET

Washington, D. C.

MR. STRAUS: Thank you, Mr. Chairman.

I have two or three brief comments again to put in the record, in addition to my statement before this same body last spring, in which I asked that we get on with the zones, confining the BOD to the zones, which has been done, and then the allocation between Maryland and Virginia.

I think until and unless that is done, we are still going to be dealing with it, even if we expand this plant to 30 million, or 150 million, and so forth.

I do want to urge the conferees with that recommendation that a hearing be held, and an allocation be made, so that we do have an orderly plan for the estuary.

The second point is, I believe the Chairman is fully familiar with an organization called the Supreme Court that has now changed their minds and are saying do it now.

I was interested in the testimony that they have now let a contract on the advanced waste treatment plant, the financing of which the Federal grant was arranged, strangely enough, in my office over five years ago, and how it takes over five years from the time the money is available to letting a contract for a plant seems to me a little less than deliberate speed, and I think, in view of the current Supreme Court, this enforcement conference is going to be faced with the problem of producing some kind of a result.

I think those are the two major points.

We still continue to oppose the plan at this point until the pounds of BOD and the allocations have been made. I think that that is the primary thing to be done.

Now, to discharge into the Potomac, we have always supported that. There was a permit issued by the Park Service which was rejected by the Washington Suburban Sanitary Commission many years ago, and I think that puts the job squarely up to the conferees that if there is a permit to discharge either into the estuary or into the embayment, that some form of tough enforcement is going to have to be had, because this is what stopped our local agency cold.

This concludes my statement.

Any questions, sir?

MR. STEIN: Any questions or comments?

(No response.)

MR. STEIN: If not, thank you very much, Mr. Straus.

We will stand recessed for ten minutes.

(Whereupon a recess was had.)

MR. STEIN: Let's reconvene.

Tomorrow's meeting will be held in the South American Room, which I understand is on this floor. We are planning to recess for the day between four and four-thirty, but as close to four as we can, to give the Maryland people a fair shake at beating the rush-hour.

MR. BINGLEY: We thank you.

MR. STEIN: Right. We don't have a rush-hour in Virginia. We just park there, that's all -- no rush.

(Laughter.)

You know, I headed for here this morning, went right down Shirley Highway, got there in about twenty minutes, and I live 16 miles out, which is pretty good, and then I got into the District and turned up 18th Street.

(Laughter.)

MR. HOPE: In your pollution-free automobile.

(Laughter.)

MR. STEIN: Right. Along with the others.

The next item on the agenda is septic tanks.

RECOMMENDATION NO. 7

SEPTIC TANKS

MR. STEIN: May we hear from Maryland?

MR. BINGLEY: Since April 1969, substantial progress has been made to correct pollution of the Potomac River by individual sewage disposal systems.

The individual sewer system is a septic tank, and you get it underground sometimes successfully, and sometimes not.

In addition to an established monitoring system within the Montgomery County Health Department for identifying malfunctioning individual sewage disposal systems, budget requests have been made for additional staff to upgrade routine evaluation of existing individual sewage disposal systems and for funds to establish an environmental laboratory for the purpose of supporting an expanded stream sampling surveillance program.

Serious and extensive individual sewage disposal system problems have occurred in Prince George's County. Correction of the majority of malfunctioning systems has been made through the extension of public sewers to the affected subdivisions and subsequent abandonment of the private systems.

The degree of concern about the problem was evidenced by the declaration of a 90-day moratorium on all construction involving individual sewage disposal systems by the Prince George's County Commissioners, acting in their capacity as the Board of Health. This occurred earlier this year.

During the moratorium, the Maryland State Department of Health, the Prince George's County Commissioners and the Prince George's County Health Department cooperatively developed a new county ordinance which became effective on July 25, 1969. The ordinance established stringent standards for construction of individual sewage disposal systems and established a system for review of soil testing, issuance of permits, and final checks before homes may be occupied. The post of Sanitation Officer was established to provide for direction of the review system.

By far, the most important progress is being accomplished now. By State law, all counties must submit a master plan for public water supply and sewerage systems by January 1, 1970. The Washington Suburban Sanitary Commission has submitted plans to the governing bodies of Montgomery and Prince George's Counties. The governing bodies are in the process of completing the Master Plan which is to be submitted to the State Department of Health for review and approval if found adequate.

When approved, the plan, in part, will designate those areas where:

1. Those areas where public sewerage systems must be provided;
2. Those areas where individual sewerage systems may be installed and used during an interim period,

pending availability of a programmed community sewerage system; and

3. Those areas where individual sewerage systems may be installed and used for an indefinite period, due to the inability to either extend sewers or finance sewers.

Increasing reliance upon public sewerage, accompanied by more restrictive policies regarding individual sewerage systems, is resulting in an actual decrease in dependence upon them. The total pollution potential reduction will be further augmented by tighter controls on future systems which may be installed in limited areas.

MR. STEIN: Any comments or questions?

(No response.)

MR. STEIN: Mr. Bingley, where you install a sewer system, do you require the houses to hook up, or can they use the septic tank at their option?

MR. BINGLEY: Under the State law in the State of Maryland, the State Health Department, or its arm, the County Health Department, can require hooking up to the community system when it becomes available.

Our practice is to have any community developing a sub-sewer system to pass a local ordinance, so that it is in their hands and not in the State's hands.

MR. STEIN: Any further comments or questions?

(No response.)

MR. STEIN: If not, thank you very much.

May we hear from Virginia? Mr. Paessler.

MR. PAESSLER: Since 1946, the Virginia State Water Control Board has worked closely with the State Department of Health to combat the problems caused by malfunctioning of septic tanks and raw sewage discharges. The correction of problems due to malfunctioning of septic tanks has in some cases been a slow process, since the final solution to this problem was the development and construction of community waste treatment facilities. This has more and more become the practice in Northern Virginia. In general, the use of septic tanks is being prevented or discouraged wherever there is a possibility of constructing community facilities.

The problem of insuring that waste matter pumped from septic tanks is treated before disposal to receiving streams is another matter. The staff is presently developing a reporting and follow-up system to combat this problem, and we will have completed development of such a system for submission to this conference at its next meeting. We will also have available at that time an accurate inventory of those remaining areas where malfunctioning septic tanks may be causing pollution problems.

I would say that as far as Virginia is concerned, that there may be some local problems that are quite offensive to the neighbors and perhaps, as far as the streams are concerned, but I don't think that this is contributing substantially to the degradation of the Potomac itself, nor to any of its major tributaries.

MR. STEIN: Any comments or questions?

MR. JENSEN: Murray, I don't know whether your friendly septic tank cleaner is going to like this second paragraph in here or not that refers to what Virginia intends to do about septic tank pumpers and cleaners.

It just occurs to me to wonder how Maryland is handling that, since it is not mentioned in their statement.

MR. BINGLEY: Under regulations of the State Health Department in Maryland governing individual sewage disposal systems, we have a requirement that any person operating a septic tank cleaning operation must be certified and receive a license from the local county health department.

The local county health departments in Maryland are responsible for carrying out water and sewerage regulations.

MR. STEIN: Yes.

MR. PAESSLER: I would like to say that the same thing applies to Virginia. The local health departments do have regulations on this. They may vary from county to county, but there are regulations covering this now.

MR. STEIN: You know, during the recess, an old friend of mine asked me if I knew what happened to the contents of my septic tank when it was pumped, and I said, "no."

Do you have any idea what those licensed handlers do with it?

MR. PAESSLER: Well, I don't think you want me to tell you here.

(Laughter.)

MR. STEIN: All I want to know is, do they put it in the Accokeek near my house?

MR. JACKSON: May I come in and take you both off the hook? It probably ends up at Blue Plains.

MR. MC KEE: That one you won, Norman.

(Laughter.)

MR. PAESSLER: Well, it has been known to go astray.

(Laughter.)

MR. STEIN: Are there any other comments or questions on this?

(No response.)

MR. STEIN: If not, let's call on D. C.

MR. HOPE: Mr. Chairman, I am very happy to report that in this particular instance, we are as clean as the driven snow.

Septic tanks are not sources of water pollution in the District of Columbia. A recent review of the records and a field survey did not reveal any nuisance conditions caused by septic tanks.

There are 22 septic tanks in the District of Columbia. Five are located at commercial establishments; the remainder are domestic. No domestic septic tanks have been installed since 1955. The last septic tank serving a commercial establishment was installed in 1963. As sewer service is made available to the few remaining premises without sewers, septic tanks will be eliminated. Additional installations will not be approved except under the most unusual circumstances.

MR. STEIN: Thank you, Mr. Hope.

In other words, you have 17 residential septic tanks in the District?

MR. HOPE: That's right.

MR. STEIN: I'll bet they don't serve the poorer homes.

MR. HOPE: Strangely enough, they do.

MR. STEIN: They do?

MR. HOPE: Yes. In some respects, I'm sorry we don't have more, because this is an area, as you know, in which I used to be a little bit of an expert.

(Laughter.)

MR. STEIN: You are one of the top experts in the country here.

Well, I think the District has made tremendous strides in this program, and I think they should be commended.

It was a surprise to all of us when we got down here in this work, and this is many years ago that I am speaking about, Malcolm Hope and myself, to find that in a large city like Washington there was still a septic tank problem. With the numbers we have heard today, this is practically de minimus, and it has practically been eliminated, and I think this is a wonderful thing.

This has taken some time, but the District authorities have proceeded on this problem inexorably through the years, and have eliminated it, and I am delighted. We are delighted to get that report.

May we go to soil erosion?

RECOMMENDATION NO. 8

SOIL EROSION

MR. STEIN: We will hear from the District of Columbia.

MR. HOPE: These comments, of course, relate to Recommendation No. 8, Soil Erosion.

While soil erosion and the resulting sediment may constitute one of the most serious water pollution problems in the Potomac River Basin, the contribution of the District of Columbia represents a small portion of the overall problem.

For a number of years, there have been regulations on the books which could be construed as soil erosion prevention measures. However, water pollution prevention is not the primary object of these regulations.

Section 7504 of the Zoning Regulations prohibits (with exceptions) the stripping of top soil in specific areas of the city. Section 7505 requires the rehabilitation of excavation so that "The final slope or wall of any excavation or pit does not exceed the normal limiting angle of repose or slippage and is planted to prevent erosion."

Article 3, Section 20, of the Police Regulations requires abutting property owners to afford protection from the runoff of soil from their lots into the street or other public space.

Although the amount of sediment generated in the District is small, the need for better sedimentation control measures was recognized in the D. C. Water Quality Standards submitted to the Secretary of the Interior in June 1967. These standards committed the District to the establishment of measures designed to reduce the quantity of eroded soil washed into the streams of the District of Columbia. In accordance with its responsibilities for implementing the water quality criteria, the Department of Public Health submitted a draft of a suitable amendment to the Health Regulations to the Commissioner with the request that the regulation (Title 8, Chapter 2, Part 8) be submitted to the City Council for promulgation. That was on April 18, 1968, one day after the District's Water Quality Standards were approved, with exceptions, by the Secretary of the Interior.

The Commissioner's office circulated the proposed regulation among the various D. C. Government agencies that would have a role in its implementation. Comments were submitted to the Department of Public Health for evaluation and resolution and these were incorporated in the draft sent to the Council. After further revision by the Council's staff, the draft regulation was presented at a public hearing held on March 12, 1969. No unfavorable comments were offered at the public hearing. After two readings, the amendment was approved by the Council on April 1, 1969, and signed by the Commissioner on April 11, 1969.

The regulation requires an unspecified level of performance rather than establishing measurable parameters of compliance. Accordingly, it was recognized that implementation and enforcement would require the establishment of guidelines to be followed by land owners and builders. Also, technical assistance would be needed. Such assistance was requested of the Soil Conservation Service. The State Conservationist for Maryland offered suggestions for developing a cooperative approach to solving the erosion problem and indicated that direct technical assistance might be made available if the District could justify the additional manpower that the Soil Conservation Service would probably need.

Steps are being taken to develop necessary procedures for implementation of the regulations. It is anticipated that such procedures, including agreements with the Soil Conservation Service, will be established before the effective date of the regulation, which is April 11, 1970.

Thank you very much, Mr. Chairman.

MR. STEIN: Thank you.

Are there any questions or comments?

(No response.)

MR. STEIN: By the way, just as to style, the planners should take note of this, because Malcolm Hope was and remains one of the best technical writers in the business. It might be worthwhile looking at his technical prose sometime.

May we hear from Virginia?

MR. PAESSLER: Representatives of the Water Control Board staff have served on the subcommittee charged with implementing Recommendation 12, which relates to, among other things, the effectiveness of sediment control programs. Fairfax County has taken the first steps toward the control of soil erosion, and we believe that working through the area Soil Conservation Districts effective local control of soil erosion will become a reality. If the recommendations of the subcommittee studying the effectiveness of sediment control programs are adopted, we are of the opinion that the groundwork will have been established for the ultimate solution to the problems from soil erosion, if not solutions, at least a long way towards solutions. We are, therefore, of the opinion that the appropriate portion of Recommendation 12 and Recommendation 8 cannot really be separated and we would submit that the two recommendations be combined to insure effective and early implementation of programs for controlling soil erosion and the resultant sedimentation problems.

MR. STEIN: Are there any comments?

(No response.)

MR. STEIN: Mr. Paessler, I wonder if you would want to expand just a second on the first steps that Fairfax County has taken.

I know, for the first time on the ballot this week, we voted for soil erosion people.

MR. PAESSLER: Murray, I am not as well up on this as I might be, but I think most persons are acquainted with the fact that Fairfax County has adopted an ordinance which requires that developers and other persons who disturb soil take appropriate steps to minimize the erosion and the discharge of surface material into streams.

I can remember just a personal note on that. A good many years ago, the Fairfax County Board of Supervisors asked that I come to discuss this matter with them, and I told them at that time that the State Water Pollution Control law was primarily aimed at point sources of waste disposal that could be controlled, and that it was my opinion that local control of the sediment problem would be much more effective.

It was some years after that that Fairfax County did adopt its first ordinance, and I believe it is one of the first in the Nation, and I believe they call it the urban-type of soil conservation program.

I would say that there have been requests from all over the Nation to Fairfax County for the details of this program.

It is an effort, and I am glad to see that they are taking further steps toward implementing this in the county, Murray.

MR. STEIN: Thank you.

Are there any further comments or questions?

(No response.)

MR. STEIN: If not, let's call on Maryland.

MR. MC KEE: With regard to Recommendation No. 8, the State of Maryland recognized some time ago that because local government has responsibility for the approval of subdivision development, land grading, and flood plain development, that the counties of the conference area are in the best position to effect sediment control programs.

Montgomery County and Prince George's County have already adopted, and are enforcing, sediment control programs.

Again, Mr. Chairman, these were patterned after the Virginia earlier efforts.

These are developing efforts which will continue to improve, and therefore are expected to provide more and more effective control over sediment pollution in the future.

Under Maryland law, sediment is defined as a pollution, and the Department of Water Resources has the authority and the responsibility for the control of sediment that causes, or is likely to cause, pollution of the waters of the State. The Department's Notice of Violation Procedure is now being applied to many instanes of sediment pollution resulting from exposed and improperly graded areas of subdivision developments and other construction activities.

Nevertheless, the present program is not as effective, nor as comprehensive as it should be. The Department has developed and submitted to the Executive Department and to the Generaly Assembly a program for the control of soil erosion throughout the State.

The State is also at the present time considering a demonstration project for the evaluation and appraisal of all the various devices and techniques used to control sediment and erosion.

In addition to this, the last session of the Maryland Legislature passed a sediment control law applicable only to the drainage area, the entire watershed of the Patuxent River.

The Department of Water Resources will recommend to the Maryland General Assembly an expansion of this control procedure to the entire State, with early emphasis on the metropolitan areas, and with late emphasis on those areas with less development or lower density population.

Thank you, Mr. Chairman.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response.)

MR. STEIN: I don't want to hold this up, but let me ask this one question:

What is the rationale for the placing of priority this way on the urban areas first, and the less developed areas last?

With all deference to D. C., when we get into a place like the District I think they are a most highly developed area because they have so much pavement and so much building that it is fair to say they probably have the least problem of soil erosion, since it is just digging up the pavement if there is any urban renewal. Yet, when you get into a less developed area in Maryland or Virginia and you get those bulldozers working on a new subdivision or a road --

MR. MC KEE: That is the area we are speaking to, Mr. Chairman, the area that is being under development for housing and for roads.

MR. STEIN: They will have the top priority?

MR. MC KEE: They have the top priority. Right.

Basically, our major activity is in this corridor between Baltimore and Washington.

MR. STEIN: All right. Thank you very much.

May we call on the interstate agency?

MR. JOHNSON: Mr. Chairman, I have no formal report to make at this time.

We have provided the chairman of the subcommittee which has been working on this recommendation, and also on Recommendation 12, which are pretty close together as far as this subject is concerned, and it is my understanding that this report will be made somewhat later.

I might say for the record that we also, in September, provided the chairman for a national conference on sediment control, and out of this conference will be coming, in the middle of January, a community action guide for sediment control, which

I think will be quite helpful in developing this kind of program.

MR. STEIN: Thank you.

Are there any comments or questions?

(No response.)

MR. STEIN: I have one general question, and maybe this should be directed to Mr. Jensen.

Have we got any mechanism for checking to see if these programs are going to produce any appreciable effect on the river?

MR. JENSEN: There will be another report submitted on that probably later this afternoon, Murray.

MR. STEIN: Thank you.

Let's go to the next item, "Debris Cleaning."

RECOMMENDATION NO. 9

DEBRIS CLEANING

MR. STEIN: I will call on the Corps of Engineers.

STATEMENT OF
COLONEL W. J. LOVE
CORPS OF ENGINEERS
UNITED STATES ARMY

Col. W. J. Love

COLONEL LOVE: Thank you, Mr. Chairman.

Conferees:

I am Colonel W. J. Love of the Corps of Engineers. I have been asked by the Chief Engineer to respond to Recommendation 9 of the April conference. I am delighted to have the opportunity to do so.

Recommendation No. 9 reads:

> "The Secretary of the Interior is asked to request the Secretary of the Army to have the Corps of Engineers (a) install and maintain devices for the purpose of preventing debris from washington into the Estuary, and (b) report to the conferees concerning the adequacy of its debris sweeping operations."

If I might, Mr. Chairman, since the statement is here, it possibly will be best if I could summarize very briefly on the debris activities as such.

MR. STEIN: Yes, but your statement will appear, without objection, in the record as if read in full.

COLONEL LOVE: Fine, if you would, sir.

I wonder if I might be permitted to give you just a little picture itinerary here, first of all, what is going on, a remark or two about extending those operations, the possibility of extending those operations, and then an updating on certain other factors, or functions of the Corps of Engineers in the area which I think will be of interest to the conferees.

Could I have the lights off and the first slide, please?

What we are talking about, of course, is any waterborne or water-washed material which may enter the estuary from any of its tributaries.

The area which is of interest to this conference, covered by existing legislation passed in 1965 by the Congress and funded, I might say, for the first time, in 1967, so we are talking about approximately a three-year old operation, is shown on this slide (indicating).

This (indicating) is the Anacostia from the Bladensburg Bridge down.

This (indicating) is from the Key Bridge on the Potomac down as far as and including Mount Vernon.

Here (indicating), of course, is a classic example of both floating debris and that other thing you have just been talking about--the erosion of soil as a pollutant itself, in the stream.

Here (indicating), we find lying on the shore samples. They must bring this out into the estuary.

Here (indicating) we find an example of another source of the material that we are talking about, the either dilapidated or, in some cases, abandoned waterfront structures.

I could spend a long time talking about existing law as far as the ability of various municipalities and other forms of government to take care of this, which is quite a problem in itself.

Here (indicating) are the upstream intakes to the Tidal Basin, and a three-year-old picture, I might point out, of what we were really directed by the Congress to take care of, the unsightliness, if you would, of the waters.

This (indicating) is another example on the Washington Channel seawall.

Here (indicating) is the first of the series showing what we are now doing. This is the front end of a debris collector. It is a small towboat with a front-end loader on the front of it, skimming the waters. It picked up a log there in its little net now (indicating), hoisted it up and is bringing it in. It is a pretty good-sized chunk.

I think you get a pretty good idea of what would happen if a pleasure craft or small craft banged into one of these, to say nothing of the unsightliness.

We bring the material normally to a barge, which will go along with the operation. We deposit the material on the barge.

There (indicating) is another boat coming in.

We move the barge to an unloading point, primarily a street facility, and we off-load it from the barge.

Col. W. J. Love

This (indicating) happens to be a crane here. We bring it ashore. In the left background, you can see a large 40 cubic yard metal container. At the present time we are disposing of this material by putting it into that type of container, and then contracting for the removal of the container and disposal in a landfill by a commercial contractor.

With large material such as this (indicating), of course, we have to bring it ashore and hit it a couple of times with a chain saw before we can get it into the container. Fortunately, most times of the year we run into very little of this sized material.

Of course, here (indicating) is what we are looking for as the process goes on, clean, unobstructed waters, as shown off of Hains Point.

That is the end of the slides. Will you bring the lights back on?

That is the existing program. It has been going on approximately three years. Approximately $450,000 of Federal funds have been expended, and approximately 4,000 tons of material have been removed under this program. This is being carried on now at an annual rate, and the 1970 funding is approximately $100,000, and we are removing someplace in the order of 2,000 tons a year.

It is a little early yet to say how effective this operation is. We were a little dismayed, frankly, when we undertook it. We saw nothing but a continual stream of this material coming down and thought it was going to be one of these jobs that you never got ahead of.

I think it has gone far enough to say that that is not the case. We see an improvement in the waters of the Potomac and of the Anacostia. There is less and less of this material coming down.

I think we must give some of the credit for that to the upstream control of the tributaries, but I suspect we are getting cleaner and cleaner banks, and they just don't get dirty that fast again.

Now, may I address myself for just a moment to, in effect, extending this program, or coming up with means of preventing debris from entering into the estuary?

As you can see, this operation is a water surface operation and actually, under the law, we go up to the high water mark on the thing.

We did participate in a cooperative program a year ago last summer with the Park Service and the District Government for the Youth Employment Program. There was some collection above the nigh water mark, bringing it down to the water, and we were picking it up at the water's edge. This does not go on to the shores. It does not go upstream, where much of this material comes from.

We have considered crash booms, debris nets, and barrier dams. At the present state of technology, and based upon experience in other areas, we are not prepared to recommend implementation of any further means at this time.

We have tried the crash booms extensively on our reservoir projects and we tried them in some of our military operations. They work real fine in slow-flowing waters. You don't get debris down in slow-flowing waters. You get debris down in periods of runoff, and in periods of runoff the debris either goes over your boom, submerges your boom, goes under your boom, or breaks your boom, and when you really start getting into this you have very little to work with.

The same is true for a fence barrier. In effect, you try to build a light-weight dam across the stream, and as soon as you start getting the loads, they cause it to fail, and you are off and running.

There has been some success in very limited circumstances for the barrier dam idea, but if you are going to build a dam, I don't think you want to build it just for the purpose of picking up debris.

We are somewhat optimistic about the way this program is going. We think with further upstream regulation and upstream control, as is obviously being evidenced on the part of counties and municipalities, and with our own efforts there the surfaces are being cleaned up.

As is included in my written statement here, I have a few other remarks on related considerations. I think it would be of interest to the conferees to know that we are still hoping for a construction start on the Bloomington Reservoir next summer, which has something to do with the waters in the Potomac.

The Bureau of the Budget is presently considering a report of the Chief of Engineers, which the Secretary of the Army has endorsed, recommending the construction of a structure on the Monocacy River above Frederick and on the South Branch of the Potomac in the vicinity of Staunton, Virginia, which will also, if approved and funds are authorized, have an effect here.

I must point out and expand on the remarks in my statement with further reference to Item 4 of the agenda, which was discussed this morning, that the Corps of Engineers is now carrying out the study of the Potomac Estuary.

We were a little surprised, frankly, in the end of October to find the scope and proposal which was presented by the FWPCA and by the Council of Governments, and are only now really getting into a position to react with it and to cooperate with it.

I think I must point out that as part of the northeastern water supply study authorized by the Congress in 1966, there is an estuarine study of the Potomac getting under way now, which has, as its primary thrust, the evaluation of the estuary as a water supply source under different stages of upstream regulation.

There is $100,000 in the current budget. A preliminary feasibility report is due next March. This is being carried out by the North Atlantic Division, my headquarters, and a study group in New York City, and it follows the pattern already developed in the study for the New York metropolitan region water supply and the southeastern New England water supply study, in which, in both cases, the Boston FWPCA office has been a primary contributor and a participator, actually, in the study of it.

I am not objecting to Item 4, or the study required in Item 4, by any manner of means, please, gentlemen. I am merely pointing out that in this business, we are, many of us, engaged in a very complex operation, and that possibly we don't get around as much as we should, and that there is certainly a need today for some agency coordination to make sure that there is not inappropriate use of Federal funds, or avoidable duplicating uses.

I think with that I should end my statement, Mr. Chairman.

MR. STEIN: Well, we will certainly look into that.

I know I haven't been in the Army as long as you have, but I put in four years. There is one thing I learned: Never stand in the way of a volunteer. If you are doing the study, we are surely going to cooperate.

(The following is the text of the statement submitted by Colonel Love for the record:

The Drift Problem

Recommendation No. 9 of the 3rd session of the Federal-State Enforcement Conference on the Potomac River held on 8 May 1969 states:

> "The Secretary of the Interior is asked to request the Secretary of the Army to have the Corps of Engineers (a) install and maintain devices for the purpose of preventing debris from washing into the Estuary, and (b) report to the conferees concerning the adequacy of its debris sweeping operations."

Drift, debris, and other trash are not only obvious and unsightly pollutants, but hazardous to navigation as well. Every year a number of fatalities and thousands of dollars worth of damage result from collisions with tree trunks, old piles, and other types of debris. Pleasure boating is particularly susceptible, making recreational activity in this kind of environment far from appealing.

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Much of the floating debris within the Potomac and Anacostia estuary originates from trees, limbs, and trunks that fall into the water, or from portions of buildings and wharves torn loose by storms, ice, or decay. Floods and high tides pick up debris and move it from creek and river bank in large quantities; storm drains add some debris; and other items are deposited either wilfully or by accident. If not removed, debris and trash accumulates over the years in the Washington area, floating back and forth with the changes of tide and wind.

Abandoned piers and other deteriorating waterfront structures in the Washington area present an unsightly and potentially dangerous condition contributing to the debris problem. No authority or funds presently exist to remove these structures, but legislation to cause their removal upon abandonment would eliminate some potential hazards.

Debris collecting in the Potomac River by the Corps of Engineers began in 1967 under authority contained in Section 301 of the River and Harbor Act of 1965 (P.L. 89-298). When work on the project first began, it seemed that we faced an almost insurmountable task. Three years of work, however, have shown considerable progress. We have removed nearly 8 million pounds of floating debris from along the shorelines, presently using two drift collectors, one snag boat, one barge-mounted crane, and two debris barges. The operational cost has totaled about $450,000.

On the basis of our experience in drift and debris removal in the Washington area, I am convinced that our present operations will achieve the objectives for which the project was authorized; we will reduce to a minimum the unsafe and unsightly situations formerly existing in certain areas of the Potomac and the Anacostia Rivers.

In further response to Recommendation 9, I wish to comment on devices to prevent debris from entering the estuary. We have evaluated existing and emerging technology and found that exclusion of potential debris is almost impossibly difficult. For instance, our experience with booms to prevent debris from blocking trash racks, has shown that this preventive method is not satisfactory, particularly during periods of heavy runoff. Currents either submerge the booms or force the material under the booms, and debris continues downstream.

The erection of mesh or fence-like structures, that would permit the flow of water but stop debris, would also be unsatisfactory since they become clogged repeatedly with debris during high runoff periods, and failures often occur. Even should failure not occur, cleaning these trash-collecting devices would be an expensive operation alone.

The construction of debris dams, to an elevation suitable for trash and debris collection, apart from the cost, might also have adverse ecological effects, depending on the number and location of the dams in the Washington metropolitan area.

Even if a practicable method of upstream containment was developed, very little reduction in daily operation costs would be realized. Application of any such method would still require construction of facilities for mooring equipment and the unloading of drift. In effect, this would merely relocate a part of the present drift removal operation -- equipment would still be required in the estuary to collect residual debris from local sources, such as storm drains.

In summary, booms, trash fences, and debris dams all increase the obstruction of the river to free and open recreational and navigational use, while not by themselves solving the drift problem.

Related Considerations

I don't want to give the impression that removal of debris is the only Corps of Engineers' program concerned with the quality of the Potomac River. As I pointed out last April in my statement to this conference, the River and Harbor Act of 1899 and the Supervisor of the Harbor of New York Act of 188, as amended in 1958, have directed the Corps of Engineers to be, to some extent, a watchdog for portions of the Potomac. The administration of these laws is the responsibility of the Corps of Engineers in preventing the discharge of illegal deposits into the Potomac. Our mandate requires us to keep constant vigilance and control over approximately 3,700 miles of shoreline in the Chesapeake Bay and its tributaries to assure that construction in the navigable waters is not adverse to the public interest. It is the further responsibility of the Corps to apprehend and prosecute violators of these laws when it is determined that damage to the public interest has resulted.

The Potomac River Basin Report of 1963 presented the results of an in-depth comprehensive analysis by many agencies of all aspects of water resource development in the Potomac River Basin. The report made recommendations designed to improve water quality, including treatment of all municipal and industrial wastes. Also recommended were pipelines to carry treated wastewater to more acceptable points of discharge, and reservoirs to regulate the now uncontrolled flow of the river to guarantee sufficient water for upstream and Washington area supply, to help assimilate the remaining land-based wastes, and to enhance the upper estuary. As of today, we have fallen far short of meeting the goals recommended in this coordinated report. We still have an opportunity, however, to move forward with action programs updated by new studies and research.

The Congress, by law, has directed the Corps of

Engineers to furnish Washington, D. C., with an adequate supply of water. This water supply mission gives us another vital stake in the Potomac River. Only through maintenance of adequate quantities of high-quality river water will we be able to satisfy the rapidly increasing demands for clean, fresh water, free of contaminating substances that could trigger hidden disasters. As recently as this past summer, the Washington area faced the threat of a critical water shortage. The six modest-sized tributary reservoirs which the Chief of Engineers has recently proposed would alleviate this condition through about 1985. (Two of these projects are presently under review by the Bureau of the Budget for submission to the Congress in the near future.) But, no upstream reservoirs will be completed for a number of years.

The situation is such that we must find a temporary water source which can be developed immediately. The estuary, as we now know its potential, may prove to be such a source, but only on a relatively short-term basis of withdrawal, and only after very careful treatment. The absence of a unified analysis of this complex body of water, the Potomac estuary, does not permit us, at this time, to consider it as a viable permanent water source. The estuary's grossly polluted condition and very limited fresh water storage capacity represent only two of the many problems which must be very critically examined. The

Congress, in 1966, directed the Corps of Engineers to analyze such water supply problems. We are now studying the Potomac estuary to determine if it is a suitable permanent supplementary water source for the metropolitan area.

Let me remind the conferees that 100 percent treatment of wastewater from treatment plants is not, by itself, an entire solution. The more we look into the matter of estuarine water quality, the more complex it is found to be.

I emphasize the necessity for moving forward now. But, don't let the urgency of the situation lead this group into the pitfalls of action for the sake of action. We should all cooperate to insure that there is no duplication of effort. and that every measure provided will yield the desired results. The effects of virus and trace chemical control, sludge disposal, the large amounts of chemicals necessary in advanced treatment processes, and the location of large plants must first be evaluated. We would be breaking our trust with the public if we do not fully identify the entire costs, and the esthetic and ecological effects of each solution considered.

In closing, let me again emphasize the necessity for coordination of all effort. We simply cannot afford the luxury of duplication, any more than we can afford inaction.)

MR. STEIN: Are there any comments or questions?

MR. JOHNSON: Just as a matter of curiosity, have you ever tried chipping this wood that you are taking out now? Is this a feasible thing?

COLONEL LOVE: We haven't tried it, to my knowledge. For about a year and a half now, since I have been in the District, we haven't used a chipper.

I have seen chipper operations in our work. It might be an interesting thing to look into a little bit. I am afraid that with the size of the water logs and the hardness, it might give us some trouble.

We are now looking into a high overdraft incineration process, which is experimental, on a large scale, in New York Harbor, and if we could keep HEW and others happy with the air pollution factors of it, we may have something in that direction.

An unholy amount of that $170,000 operation budget goes for sanitary fill removal. We would rather be able to spend it in collecting.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: You know, there is one thing, Colonel, I just wish I could do. I try to impress my wife with your skimmer operations and your collecting operations, and all the statistics in what you have covered, but we are pretty assiduous walkers, and we go around Hains Point. Once I would like to get her down there in Hains Point when you have just finished the cleaning. I never seem to hit that.

COLONEL LOVE: You probably know there are pockets where this material naturally collects.

MR. STEIN: Right.

COLONEL LOVE: And if you don't hit one of those pockets after about three or four times, there is your problem. We don't do a complete control all the time either.

MR. STEIN: Yes. I know the upstream areas where you showed the pictures too, but I do think with respect to the real visitor impact here and their talking about a dirty Potomac, where they get the notion they have is just the casual look at the river from the seawall around Hains Point, and it seems to me that if we are going to appear good, as well as be good, this might be a priority item.

Are there any further comments or questions?

(No response.)

MR. STEIN: If not, thank you very much for your report, Colonel.

The next item on the agenda is the "Oil Survey Report."

RECOMMENDATION NO. 10

OIL SURVEY REPORT

MR. STEIN: May I call on the FWPCA?

MR. JENSEN: Mr. Chairman, this report will be presented by Russel Wyer from our office at Charlottesville.

STATEMENT OF

MR. RUSSEL H. WYER

CHIEF, TECHNICAL INVESTIGATION BRANCH

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

MIDDLE ATLANTIC REGION

DEPARTMENT OF THE INTERIOR

CHARLOTTESVILLE, VIRGINIA

MR. WYER: Mr. Chairman, Conferees, Ladies and Gentlemen:

In accordance with Recommendation 10 of the Potomac Enforcement Conference, an Oil Survey Committee, comprised of representatives of the Virginia Water Control Board, District of Columbia Department of Public Health, Maryland Department of Water Resources, and the Federal Water Pollution Control Administration, was established. The committee has had two meetings and a three-phase program and schedule were adopted.

The first phase consists of an inventory of oil storage and handling facilities. A listing of facilities was completed in October and the complete inventory will be finished by May 1970.

R. H. Wyer

Phase II consists of field surveys of all major facilities. This phase will be completed by May 1970.

The final phase will consist of the development of a prevention program and a report of findings and recommendations. The draft report is tentatively scheduled for completion by July 1970 with the final report completed by September 1970.

The first phase of the program was initiated in August and a listing of all major oil suppliers has been completed. The listing of major users such as industry, institutions, Federal installations and apartment houses is under way and will be completed during the field surveys. The complete inventory which includes storage capacities and oil types is approximately 75 percent complete. No suppliers or users having storage capacities less than 10,000 gallons will be included in the inventory or surveyed. Based on the inventory data, the following is a breakdown of the types of major oil handling facilities in the conference area:

There are 5 oil terminals, each receiving bulk oil by water transport;

5 pipelines which are operated by 3 companies;

50 bulk storage facilities;

no oil refineries;

12 asphalt plants;

1 commercial airport;

20 Federal installations with major oil storage
facilities;
4 railroad refueling and overhauling facilities; and
1 vessel refueling operation.

The Oil Heat Institute of Washington has estimated that the major bulk storage facilities and terminals supply a consumer demand in the metropolitan area of approximately 450 million gallons annually. The largest supplier of heavy oil (No. 6) in the conference area is Steuart Petroleum Company, and the largest user is the Potomac Electric Power Company.

The second phase of the program will be initiated in December and on-site investigations will be made of all major oil facilities, Federal and non-Federal, in Virginia and the District of Columbia. Field investigations in Maryland will commence in January. A random sampling program will be used to check oil handling procedures at minor storage facilities at institutions, office buildings and apartment houses. Emphasis will be placed on those users adjacent to or near watercourses. In addition to on-site surveys of bulk storage areas, terminal and pipeline, each State and the District of Columbia will make a representative or random-type survey of the methods of disposal of used oil from service stations. This will include an investigation of oil-holding devices, waste oil collectors, and ultimate disposal of the used oil. Also, during the field investigation, the major oil suppliers will be requested to furnish information on contingency planning measures for combating accidental spillages of oil.

After completion of the field surveys, a prevention program will be developed for each State, the District of Columbia, and Federal installations. This program will be presented with a report of the findings of the committee to the conferees in November 1970.

I had hoped to be able to report that there were no significant oil spills in the conference area in the past six months. However, a spill of approximately 500 to 1,000 gallons of heavy oil occurred in the Anacostia River last Thursday.

The spill was reported by the Corps of Engineers and the Coast Guard immediately placed a boom in the river just below the Maryland-D. C. line. The spill was thoroughly investigated by representatives from Maryland, District of Columbia, Corps of Engineers and the FWPCA, but the source of the spill was not determined.

The oil (this was a small amount) contained by the boom was cleaned up by applying Sorbent C and removing the oily material from the water surface.

The clean-up project was a cooperative effort between the Corps of Engineers, District of Columbia, FWPCA and the National Park Service. The Hess Oil Company provided the boom and Steuart Petroleum Company provided six bags of Sorbent C.

We anticipate that there will be an increase in oil spillages in the next six months, and appropriate committee members will investigate each incident and prepare a report of actions taken. The findings will be made available to each conferee through their representative on the committee.

MR. STEIN: Are there any comments or questions?

(No response.)

MR. STEIN: There is no hope of finding who spilled that?

MR. WYER: Not at this time.

MR. STEIN: Well, that's the trouble with these oil spills. Unless it is real big, or you catch them red-handed, you don't know who did it.

MR. WYER: This is one of the problems on the Anacostia.

MR. STEIN: Well, you contained it, didn't you?

MR. WYER: Yes, we did.

MR. STEIN: As some of you may know, we had an oil spill up in the New Jersey-New York area last week, and the oil was about five times that which came out of Torrey Canyon. Of course, they did not go into very good waterways up there anyway, but we managed to contain the oil, at least, and with certainly not the widespread damage that we had at Torrey Canyon.

Considering the amount that we had to deal with, it probably was a miracle that we were able to hold it.

MR. HOPE: You say five times as much?

MR. STEIN: Yes, sir, a whole tank spilled.

Sometimes you are lucky. These are the ones you don't hear about. I should not say "lucky."

You know, we have a very difficult case up there, but this shows you the advantage again, and this is something that people don't realize when you talk in terms of the boom and what these people are doing.

When we get these spills, if they are in the right kind of place, at least you have a fighting chance of containing some of them now, which we did not have before.

Are there any other comments or questions?

MR. MC KEE: Mr. Chairman, just a comment.

The last session of the Maryland Legislature also enacted law and placed the responsibility in the Department of Chesapeake Bay Affairs for the containment and cleaning up of oil spills in tidewaters, so that there is a Maryland program to do this in the tidewater regions of the State.

MR. STEIN: Right.

Are there any further comments or questions?

(No response.)

MR. STEIN: May we now go to the "Anti-Litter Program"?

RECOMMENDATION NO. 11

ANTI-LITTER PROGRAM

MR. STEIN: I will call on the National Park Service.

STATEMENT OF

MR. DAVID O. KARRAKER

SPECIAL ASSISTANT TO THE REGIONAL DIRECTOR FOR ENVIRONMENTAL AWARENESS

NATIONAL PARK SERVICE

MR. KARRAKER: Mr. Chairman and Conferees:

I am David Karraker, Special Assistant to the Regional Director of the National Park Service.

The National Park Service responsibility in the anti-litter program involves four basic points:

1. A program for the clean-up of shoreline debris and litter on National Park Service lands;

2. A review of the operating procedures of State and local parks with a view toward minimizing the amount of debris and litter that enters the Potomac and its tributaries;

3. A public information program to obtain maximum participation; and

4. Appropriate coordination with the Corps of Engineers.

D. O. Karraker

Thus far, the following progress has been made:

A program of clean-up of National Park Service lands

1. A continuing program of clean-up is under way along Rock Creek, the Tidal Basin, East and West Potomac Parks, Kingman Lake on the Anacostia, and adjacent to the George Washington Memorial Parkway and the Chesapeake and Ohio Canal;

2. Debris collecting gates have been erected at the entrance and exit to Kingman Lake. Trapped material is removed from the waterway. I should emphasize this is a temporary measure, so that we can clean out the lake basin.

3. A youth group cleaned the banks of Theodore Roosevelt Island in June. This was done primarily for publicity and public relations purposes; and

4. Funding has been requested to supplement park maintenance provisions in this regard and to establish an office to deal with the litter and debris problem.

Review of State and local park programs

1. We attended the Capital Area Park and Recreation Executives' monthly meeting and presented a talk on the overall anti-litter program. Assistance was solicited. Representatives of park and recreation organizations of the cities of Arlington and Alexandria and Prince William and Fairfax Counties, Virginia, Prince George's and Montgomery Counties, Maryland, and the

District of Columbia attended.

2. Discussions have been held with various operating officials and spot investigations have been made throughout the metropolitan area.

3. We participated in a discussion and field inspection of the Anacostia River with Mr. Joseph Gebbia, President of the Prince George's Boatowners Association. Mr. Gebbia expressed deep concern over "inaction" regarding floating debris. According to Mr Gebbia, this debris makes power boating hazardous and sometimes impossible in the upper reaches of the Anacostia.

We solicited cooperation and help from members of every county in this area, plus Alexandria, Arlington and the District. We had various discussions with local operating officials, including several citizen groups.

In the field of a public information program, we have done the following:

1. Radio spot announcements have been issued to all stations in the metropolitan area and are being utilized, and in your report you will find several of these announcements appended.

2. We have developed a group of six speakers available to talk on environmental problems in the District area, the metropolitan area, and in many of these talks, where pertinent,

we do cover litter problems in the clean-up of the Potomac.

3. We have developed an environmental resource center at the Rock Creek Nature Center, and materials on litter and pollution of the river are available, particularly there for students and teachers.

4. We have developed an environmental study area on Theodore Roosevelt Island, and there the teacher materials do include a fair degree of material on the anti-litter program and problem.

5. We have secured posters on anti-littering from the Corps of Engineers, and these we are using at our various marinas and other installations.

6. Currently we are planning two spot television announcements of the problem.

7. As I have cited before, we did utilize one youth group for publicity purposes. This was covered by six metropolitan newspapers and from Chambersburg, Pennsylvania. I think they will hit the nail on the head. If you haven't seen their report, it is in the back of my report.

Coordination with the Corps of Engineers

We met with Mr. John Reynolds, who is in charge of the Corps of Engineers drift removal program in the Baltimore and Washington areas, and he confirmed that the Corps indeed would remove material that we or other agencies stockpiled on our land. This is drift material on the shore, and, of course, not from the water itself.

So, we are taking advantage of this service in the Kingman Lake area and a number of other locations, and if you doubt the speed with which the Corps operates -- I don't know why you should -- but if you do, about three days ago I reported a problem just north of the Key Bridge, and this morning the problem was no longer there. I would say a good working relationship exists between the National Park Service and the Corps of Engineers.

Finally, we feel that our overall program is well under way. However, it becomes very clear that additional funds to finance this program are needed. We are exploring various sources of funding, and, also, the use of volunteer aid is under study.

That is my report.

MR. STEIN: Thank you, sir.

Are there any comments or questions?

MR. JENSEN: Mr. Karraker, I have two questions.

The first one of them relates to your meeting with the Capital Area Park and Recreation Executives. Could you tell us the outcome of that meeting with them, and the probable action that we might expect from the other park operating agencies.

MR. KARRAKER: Yes. Several of the people there appointed key men in the areas under their jurisdiction to deal with the problem and meet with us on various aspects of it, and I think this is the beginning of real activity in this regard.

I should add, this meeting was about three or four weeks ago, so that the time has not been available for real results as yet.

MR. JENSEN: My other question relates to the relative control that we have over our waterfront in the metropolitan area. A lot of it is in parks, but a lot of it is not.

Should we also be trying to reach these privately held areas to prevent and clean up debris along there, and, if so, how do we go about doing this?

MR. KARRAKER: Well, our thrust thus far has been the use of the mass media, but I suspect we could meet with private groups and all manners of people.

MR. JENSEN: That is all I have.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: If not, thank you very much.

With that, we will stand recessed until tomorrow morning at 9:30 in the South American Room.

(Whereupon, at 4:15 p.m., an adjournment was taken until Friday, November 7, at 9:30 a.m.)

Progress Meeting

Potomac River - Washington Metropolitan Area Enforcement Conference

Statler Hilton Hotel, Washington, D. C.

November 7, 1969

9:45 a. m.

DEPARTMENT OF THE INTERIOR

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

195-196

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Progress Meeting

Potomac River - Washington Metropolitan Area Enforcement Conference

Statler Hilton Hotel, Washington, D. C.

November 7, 1969

9:45 a.m.

BEFORE:

Mr. Murray Stein, Assistant Commissioner for Enforcement, Federal Water Pollution Control Administration, Department of the Interior.

CONFEREES:

Paul W. McKee, Director, Maryland Department of Water Resources

W. McLean Bingley, Chief, Sanitary Engineering, Division of Water & Sewerage, Maryland State Department of Health

A. H. Paessler, Executive Secretary, Virginia State Water Control Board

Eugene T. Jensen, Regional Director, Middle Atlantic Region, FWPCA

Malcolm Hope, Associate Director, D. C. Department of Sanitary Engineering

Carl J. Johnson, Executive Director, Interstate Commission on Potomac River Basin

Norman E. Jackson, Director, D. C. Department of Sanitary Engineering

PROCEEDINGS

MR. STEIN: We will reconvene.

Mr. Hope?

MR. HOPE: Mr. Chairman, as you will recall, yesterday we discussed Recommendation No. 3, which deals with the problems of heated water. We indicated that there would be a report presented this morning by the Potomac Electric Power Company, and Mr. L. W. Cadwallader of that company is here to present the report this morning.

If you will, Mr. Cadwallader?

STATEMENT OF
MR. L. W. CADWALLADER
VICE PRESIDENT
POTOMAC ELECTRIC POWER COMPANY

MR. CADWALLADER: I want to thank the Chairman for giving me this opportunity. I did want to present this report personally, but I just couldn't be here yesterday.

The Potomac Electric Power Company, in cooperation with the District of Columbia Department of Public Health, conducted river surveys in the area of Pepco's Benning, Buzzard Point and Potomac River powerplants through the months of June, July and August of 1969. These summertime months are the critical period of the year for river thermal effects. Pepco's peak electrical load occurs during the summertime due to airconditioning, and also during this period the sun contributes enormous quantities of heat to all bodies of water. The surveys were run in close cooperation with Mr. Arnold Speiser, Chief of the Water Quality Control Division of the District of Columbia Public Health Department. Mr. Grover W. Cook of the Federal Water Pollution Control Administration was kept informed of the progress of these surveys and he and his staff offered helpful advice and assistance.

The purpose of these surveys was to evaluate the effects of heated discharges on the waters of the Potomac and Anacostia rivers and to determine what mixing zones would be necessary to meet the District's water quality criteria. River temperature readings were taken over a ten-week period, five days per week. The area surveyed at each plant site covered the entire width of the river and sufficient distances above and below the plant to insure coverage of all areas affected by the plant's heated water discharge. By mid-August, it had become apparent that repetitive data was giving good temperature patterns at all three stations. At this point, we continued to take surface temperature readings, but also added to the study both river bottom temperature readings and limited mud temperature readings. We also took depth soundings to determine accurate river bottom contours in the areas being surveyed. During all survey periods, meteorological data, as well as pertinent plant operating data, were also accumulated. This total mass of data is now being reduced to manageable statistics, from which meaningful conclusions can be drawn. It is expected that a final detailed report will be available in about two months. However, at this time, we can state that the data for our Buzzard Point and Potomac River Stations looks very encouraging from the point of view that the heated discharges are cooled more rapidly and in a smaller mixing zone than had been anticipated.

As had been expected, our problem area is at the Benning Generating Station on the Anacostia River. We recognized this potential problem even before the initiation of D. C. Water Quality Criteria and in March 1966 placed an order for a closed circuit cooling tower for a new generating unit being installed at the Benning site. We are now proceeding with a duplicate installation at this site. In addition, we are planning to retire the old 200-pound generating equipment by 1973, and water of magnitude of the reduction in the heat projected to the river by this retirement would be in the order of one-third to one-half.

The river temperature problem at the Benning Station is aggravated by a silt bar downstream from the plant's discharge tunnel. This silting is a result, at least in part, of a District storm sewer which discharges into the river at this point.

In summary, we feel that considerable progress has been

L. W. Cadwallader

made in the study of the heated water discharges from the three generating stations concerned and that the forthcoming report will be informative and useful. Also, we wish to thank the District of Columbia Public Health Department and the Federal Water Pollution Control Administration for their interest and help in these studies.

Thank you.

MR. STEIN: Thank you, Mr. Cadwallader.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much.

I think the cooperative industry-governmental approach is the only one that we can really pursue to get meaningful answers and an orderly approach to the problem, and I think your company should be commended on its cooperative attitude in this endeavor.

MR. CADWALLADER: Thank you, sir.

We have been interested in this problem for a lot of years, as Mr. McKee can confirm, and we have really been trying to do something and learn more about the thermal discharges and thermal effects.

MR. STEIN: Right. Thank you.

MR. CADWALLADER: Thank you, sir.

MR. STEIN: At this point, may we hear from Julian C. Holmes, who also waited until today.

Mr. Holmes.

STATEMENT OF

MR. JULIAN C. HOLMES

OXON HILL, MARYLAND

MR. HOLMES: My name is Julian Holmes. I am a resident of Oxon Hill, Maryland.

As a participant in the April 3 session of this conference, I attempted to review the tragedy of Maryland's failure to come to grips with the pollution problem.

It is now November, and not much has changed. Maryland citizens still find it difficult to communicate with officials who are responsible for Maryland pollution control policy. Even our Congressman has continued to frustrate the efforts of citizens to find a constructive solution to the present problem of the Piscataway plant.

On May 20 and 21, the House Committee on Interior and Insular Affairs heard testimony concerning the effect of the new Piscataway Sewage Treatment Plant on the environment of our new Federal Piscataway Park. The official spokesman for the Maryland State Health Department claimed that sewage from the Piscataway plant "was actually an asset to the Potomac River rather than a source of pollution." So embarrassing was his testimony that we were not surprised to learn shortly thereafter of the transfer of this official from the Health Department to a position with the Maryland Department of Natural Resources.

The Health Department, however, does not seem to have profited from this experience, and the new spokesmen have given no indication that they intend to reform Health Department policy. On September 24, Maryland Health Secretary Dr. Neil

Solomon ordered the expansion of the Piscataway plant operation. I asked Dr. Solomon if the proposal provided for effluent quality that would meet the Federal Water Quality Standards. He answered, "I don't know; you should ask Mr. McKewen."

Mr. McKewen promptly confirmed my suspicion that the present Washington Suburban Sanitary Commission (WSSC) proposal for the expansion of the Piscataway plant does not provide for effluent of purity sufficient to meet the Water Quality Standards. In fact, the order to expand places no requirements on effluent quality. I have attached a copy of the Solomon-McKewen order of September 24, to the copy which the Chairman has. I was not able to make enough copies to attach to all the copies.

MR. STEIN: Without objection, this will appear in the record as if read.

MR. HOLMES: It is somewhat painful to remind this gathering that on April 2, Mr. Thomas McKewen, Director of the Maryland Bureau of Resources Protection misinformed the conference on the nature of the problem at Piscataway and attempted to place the blame for the mess on the National Park Service. This and several other misstatements of fact appear in Paragraph 5 on Page 4 of his April 2 presentation. Paragraph 3 on the same page demonstrates Mr. McKewen's failure to understand the relation between land-use decisions and waste management control as the game is played by the Maryland State Health Department. I have attached a copy of Mr. McKewen's statement.

In view of what is now known of the fraudulent nature of the Piscataway program, past and proposed, I would respectfully advise this conference to review the statements made by all Maryland participants at the April session. Comparison of these statements with the facts might suggest explanations for the unprofessional behavior of the Maryland Health Department and WSSC officials.

After reading and listening to the testimony delivered yesterday by representatives of the Maryland Health Department, I would suggest that this conference review very carefully some of the incredible statements made by W. McLean Bingley at yesterday's session.

I have requested that that Washington Suburban Sanitary Commission furnish this conference with the sewage flow figures for the Piscataway plant and for the pumping stations which now divert Piscataway input to Blue Plains in the District of Columbia. With these figures, this conference can evaluate the Washington Suburban Sanitary Commission propaganda barrage which touts the continuous improvement in the Piscataway plant BOD reduction figures.

Because Maryland policy on the Potomac River is not only a national disgrace, but a serious threat to the health of the residents of the river basin, Maryland homeowners have been forced to adopt a "get tough policy" to protect their individual and collective environments against the actions of our own Health Department officials.

Such citizen effort has helped to direct the course of official inquiries into the Maryland problem. We have prepared for the House Committee on Interior and Insular Affairs detailed documentation on the Maryland State Health Department and Washington Suburban Sanitary Commission responsibility for the Piscataway Bay scandal. We have helped secure the indictments of two Prince George's County Health Department officials, who are also officials of the State department, for their failure to enforce the local and State antipollution laws.

I have asked this week that the Maryland Attorney General initiate a Grand Jury investigation of the Maryland Department of Health. Part of my recommendation was that the State assign a special prosecutor to handle those indictments we have already obtained. A copy of these requests is attached.

It is my hope that at the next session of this conference we may have real progress to report. In the meantime, the Department of the Interior may rest assured that we shall not let up in our effort to impress our Maryland officials with the need to clean up pollution, rather than to promote it.

(The following documents were submitted by Mr. Holmes

J. C. Holmes

for inclusion in the record:

C O P Y

8062 Thorne Drive
Oxon Hill, Maryland 20022

November 1, 1969

Hon. Francis B. Burch
Attorney General for the State of
Maryland, State Law Department
1200 One Charles Center
Baltimore, Maryland 21201

Dear Sir:

I write to bring to your attention the general state of corruption that exists within the Maryland State Health Department in its handling of Prince George's County affairs.

Over the past several years, the State Health Department has made a practice of overlooking illegal activities of its employees and officials in the granting of sewage disposal system permits for influential land developers. These permits have been issued contrary to the public interest for individual homes, communities, and even regional sewage treatment plants. In most cases, accommodation of land developer interests is the sole justification for deliberate actions that are almost certain to endanger the public health and welfare.

J. C. Holmes

Some of the most scanadlous actions of the Maryland State Health Department involve the brand new sewage treatment plant located on Piscataway Bay on the Potomac River. In total disregard for the public health, the State Health Department permitted the Piscataway Plant to discharge effluent into Piscataway Bay. Raw sewage was dumped into Piscataway Creek, sludge now covers the bottom, and the upper Bay is now unfit for recreation.

Within months of the commencement of operation, the Plant was literally overflowing. Last February, the State Health Department gave official sanction to operate the Plant 60% over its design capacity. On September 25 of this year, Dr. Neil Solomon, Secretary of Health and Mental Hygiene, ordered the Plant to be expanded 600% with no provision for the proper outlet for the effluent. When I asked Dr. Solomon whether the proposed plant could meet the requirements of the Federal Water Quality Standards, he replied, "I don't know." He referred me to his State Health Department colleague Thomas McKewen who confirmed my suspicion that the present proposal for plant expansion does not provide for effluent of purity sufficient to meet the Water Quality Standards!

The Prince George's County Grand Jury has indicted two Prince George's County Health Department officials for improper conduct in connection with the sewage disposal system scandals. The State Health Department is equally culpable in this matter, and its recent actions concerning the Piscataway Plant demonstrate its intention to continue to flout the public interest whenever local developers bring pressure to bear.

As a taxpaying citizen of the State of Maryland, I urge you to institute immediately a Grand Jury investigation into the improper and illegal activities of employees and officials of the Maryland State Health Department. The official findings of the Prince George's County Grand Jury should alone be sufficient reason to open the investigation.

Concerning the prosecution of those already indicted and others who may be indicted in the Prince George's County septic system investigations, I suggest that in view of the extreme prejudice shown by Prince George's County prosecutor Arthur Marshall, you should assign an out-of-County prosecutor to handle these cases.

Throughout the Health Department controversy, Mr. Marshall and his staff have discouraged citizens, including myself, from bringing pertinent information to the Grand Jury. After the Grand Jury indictments, Mr. Marshall showed little interest in the case. When on October 14, 1969, he was asked by a Washington Post reporter whether he would prosecute, Marshall was quoted as saying, "I have my own feelings about it, but that's beside the point."

In 1967, citizens asked Marshall to investigate illegal activities of Maryland-National Capital Park and Planning Commission officials. Marshall took little action. Instead, he attempted to intimidate citizen witnesses who appeared before the Grand Jury by asking them to waive their rights to protection under the Maryland and United States Constitutions. His bizarre preoccupation at that time with the prosecution of several Prince George's County unwed mothers seemed more important than bringing County officials to justice.

These are most serious matters, and upon your shoulders may rest the failure of the State to investigate and bring to justice those County and State officials who, for the private gain of influential developer interests, endanger the health of the citizens of Maryland.

I respectfully urge that immediate action be taken to halt the insidious influence peddling which permeates the Maryland State Health Department.

Sincerely,

/s/

Julian C. Holmes

Copies to:

Hon. Joseph Tydings

Hon. John P. Saylor

Hon. Charles McC. Mathias

C O P Y

For Immediate Release

* * *

J. C. Holmes

September 24, 1969

WASHINGTON SUBURBAN SANITARY COMMISSION
4017 HAMILTON STREET
HYATTSVILLE, MARYLAND 20781

It has been determined that the inadequate capacity of the Piscataway Wastewater Treatment Plant owned and operated by the Washington Suburban Sanitary Commission, and within its exclusive jurisdiction, is a menace to public health and, therefore, it is urgent that the capacity be increased so as to protect the public health.

It is, therefore, this 24th day of September, 1969, ORDERED by the SECRETARY OF HEALTH AND MENTAL HYGIENE, by virtue of authority conferred upon him by the General Assembly of Maryland, that you proceed with the construction of all additions to the Piscataway Wastewater Treatment Plant as aforesaid so as to increase the capacity to 30.0 mgd.

It is further ORDERED that you have contract plans and specifications for the total additions to the Piscataway Wastewater Treatment Plant completed, and bids obtained on or before November 2, 1970.

It is further ORDERED that you have the said total additions to the Piscataway Wastewater Treatment Plant completed and placed in operation on or before, but not later than, December 31, 1972, such construction to be in accordance with plans and specifications to be submitted to the State Department of Health and Mental Hygiene for review, approval and issuance of a permit before construction operations are started.

Witness the hand and seal of the Secretary of Health and Mental Hygiene, the day and year first above written.

SECRETARY OF HEALTH AND MENTAL HYGIENE

____
Neil Solomon, M.D., Ph.D.

Served this ____ day of _____________, 1969,

on___________________________, by ________________________.

cc: Mr. Batterton
Dr. Peeples
Dr. Finucane
Mr. Schmidt
Mr. McKewen
Mr. Bingley
Mr. Jensen

* * *

Anticipated continued population growth will require continuing extension and reinforcement of sewage collection and transportation facilities. The State accepts as a major obligation the provision of assistance to local jurisdictions in carrying out such construction in a timely and effective manner.

This obligation is being met now by the construction grant program described earlier.

Since there will always be some sparsely populated and isolated areas where a central sewerage system is neither feasible nor necessary, there is a further obligation to control the installation of individual septic tank systems both to provide satisfactory service to individual property owners and to prevent failures that would result in the pollution of tributary streams. This control is carried out through local health departments.

In the control of both centralized and individual sewerage systems, it is our intention that waste management support sound local and regional land use decisions rather than dictate land uses.

Once sewage has been collected and transported, adequate treatment to protect water quality must be provided. In this connection, the District of Columbia has provided an outstanding example of regional cooperation. Over 40 percent of the load imposed on the District of Columbia Water Pollution Control Plant is generated in Maryland. This Plant is scheduled for very costly enlargement and improvement. In recognition of Maryland's obligation to share in this cost, the 1969 session of the General Assembly enacted legislation which will make some of these costs eligible for State grant support. It is estimated that the improvements necessary to accommodate Maryland residents will cost over $27 million during the next four years. The State will guarantee that 80 percent of this amount will be borne by the combination of State and Federal grants. If Federal grant funds continue at their present inadequate level, the State share may approach $20 million.

This use by Maryland residents of a District of Columbia facility is only one example of the regional cooperation that is a key to the provision of adequate service and sound environmental management. Another example is the Potomac River Interceptor Sewer. In order to make this sewer available to Maryland residents, the Washington Suburban Sanitary Commission will be required to contribute over $5 million. Through special legislation enacted last year, half of this cost is being borne by a State grant.

As population growth spreads beyond the boundaries of the District of Columbia service areas, additional sewage treatment plants may be needed. Such plants will be designed with the protection of the Potomac River as a primary consideration. One such plant is now in operation at Piscataway. This plant was designed to provide a high level of waste cleansing even though its discharge constitutes only about one percent of the organic load on this stretch of the Potomac River. The plant is scheduled for expansion in the near future to accommodate growing population. The enlarged plant will provide an even higher degree of treatment than that required to meet Water Quality Standards. However, a serious problem exists at this plant. It was designed to discharge directly to the Potomac River, but the Washington Suburban Sanitary Commission has been unable to secure authorization to construct an outfall sewer across National Park Service property as was intended and, it was believed, agreed to when the plant was constructed.

This problem has even greater significance than the penalties it has imposed in terms of water quality, public satisfaction, and money. It has illustrated that effective water quality management will be achieved only to the extent that effective intergovernmental and regional cooperation is achieved.

4/2/69 McKewen

* * *

MR. STEIN: Thank you, Mr. Holmes.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much, sir.

Do the Maryland people want to avail themselves of calling upon the people who are mentioned in this to give them an opportunity to reply, if anyone wants to do that now?

MR. BINGLEY: I would only comment, Mr. Chairman, that I think the record of the last session and what has been said yesterday stand on their own merits, and we will stand by them.

If Mr McKewen or Mr. Coulter care to speak, naturally, they can.

MR. STEIN: I think we will go on with the program.

Before we leave this, from the information we have had up to now, I think we have the report from Virginia that their communities are on schedule with the clean-up in accordance with the conference requirements; we have had a report from the District of certain problems due to financing and site acquisition; and we have had a report from Maryland dealing with certain problems on the Piscataway and possibly other plants, due to permits and site locations, and so forth.

The conferees will consider all those problems.

You all recognize that the conferees, when we go into executive session, are going to have to determine this on the basis of facts and try to move the program forward. I don't know that on the basis of the information here, or on the basis of the type of panel we have at the conference, we are either authorized or are in a position to make any evaluation of some of the conclusions represented by some of the participants here.

Of course, everyone has the right to make his own conclusions. However, I want to tell the audience this, because I am going to tell the conferees this in executive session. The only basis the conferees are going to have to be able to move on is on the basis of the facts as presented here.

May we go on with the Surveillance Committee Report?

RECOMMENDATION NO. 12

SURVEILLANCE COMMITTEE REPORT

MR. STEIN: Mr. Jensen?

MR. JENSEN: Mr. Chairman, this report will be presented by Mr. Frank Blaisdell of the Middle Atlantic Regional Office.

STATEMENT OF

MR. F. R. BLAISDELL

DEPUTY REGIONAL DIRECTOR
MIDDLE ATLANTIC REGION
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
UNITED STATES DEPARTMENT OF THE INTERIOR
CHARLOTTESVILLE, VIRGINIA

MR. BLAISDELL: Mr. Chairman, Conferees and Ladies and Gentlemen:

F. R. Blaisdell

Recommendation No. 12 of the Conference on Pollution of the Interstate Waters, Potomac River and its Tributaries (Washington Metropolitan Area) reads as follows:

> "The Federal Water Pollution Control Administration, in cooperation with the States of Maryland, Virginia, and the District of Columbia, and the Interstate Commission on the Potomac River Basin, shall coordinate surveillance programs, including stream monitoring, effectiveness of waste treatment plant operations, and of sediment control programs."

To carry out the charge of the conferees, a committee with representation from the Federal Water Pollution Control Administration, the three States and the Interstate Commission on the Potomac River Basin was established. Subcommittees within the parent committee were then organized to evaluate progress in the three areas of responsibility assigned to the committee, and to make recommendations to the conferees as to the direction to be taken in the future. The findings and recommendations of the committee in these three areas follow:

Stream Monitoring

Water quality monitoring has existed in the Washington metropolitan area for many years. However, the activities of the many agencies involved have never been integrated into one complementary stream monitoring program. The Stream Monitoring Subcommittee has endeavored to develop the first integrated documentation of the total activities of each of the participating agencies. The stream monitoring inventory thus compiled presents a relatively complete picture of data collection activities by location, frequency and parameter.

A total of 90 stations are presently being operated in that portion of the Potomac River Basin between Little Falls and Hallowing Point. These stations are operated by the following agencies: D. C. Department of Public Health, D. C. Department of Sanitary Engineering, Federal Water Pollution Control Administration, Maryland Department of Water Resources, Virginia State Water Control Board, and the Baltimore District Office, Corps of Engineers.

Inventory information indicates that sampling duplication exists at four points and involves twelve stations, as reported by the participating agencies. Sampling schedules were not included in the initial inventory; consequently, a determination as to whether the duplication increases sampling frequency, or results in the unnecessary expenditure of manpower and funds, cannot be made at this time.

The inventory has been conducted primarily to provide a base on which to build a comprehensive stream monitoring program. The adequacy of existing activities cannot be accurately determined until such time as total data needs are made known and are properly evaluated. Considerable information is being collected relative to organic pollutants; however, collection of bacterial, nutrient, sediment, and industrial-oriented data probably should be improved. Preliminary observations indicate that the majority of data being collected is not readily available for rapid dissemination and/or evaluation. This necessitates the adoption of a central data handling system, whereby each agency could effectively obtain and utilize data obtained by other participating agencies. For example, initial effort has been expended by the Interstate Commission on the Potomac River Basin toward the adoption of a central data storage and retrieval system. This employs the STORET system presently being utilized by the Federal Water Pollution Control Administration and the U. S. Geological Survey. The adoption of this, or a similar system, for storage of all data collected in the conference area, should be thoroughly investigated by this subcommittee.

Conclusions and Recommendations

The following conclusions and recommendations are based on the findings of the Stream Monitoring Subcommittee:

1. Specific data needs must be brought to the attention of the Stream Monitoring Subcommittee.

2. The inventory must be thoroughly reviewed to determine the extent to which data needs can be met. Review may result in the addition and/or elimination of stations and parameters and the increase and/or decrease in frequencies.

3. Data collection and reporting must be fully coordinated. Coordination will involve time of sample collection, data reporting, analytical quality control procedures utilized in analysis, central storage of data, river-mile points, and dissemination of information. To accomplish this, the subcommittee requests the conferees designate an agency to assume this responsibility.

4. The subcommittee requests the conferees to direct it to proceed with the design of a fully integrated and coordinated stream monitoring program in accordance with the following schedule:

a. Basic inventory of existing activities.
(Submitted herewith.)

b. Complete comprehensive inventory of existing activity.
January 1, 1970.

c. Complete evaluation of total existing monitoring system and recommend necessary modifications.
April 1, 1970.

F. R. Blaisdell

d. Submit a recommended stream monitoring and data reporting system.

September 1, 1970.

Efficiency of Waste Treatment Plant Operations

This appraisal consists of two phases -- an inventory followed by evaluation and recommendations. The evaluation will include visits to the principal water pollution control plants in the conference area. To date, the subcommittee has visited the D. C. Water Pollution Control Plant, and the Alexandria Sanitation Authority Plant. The following is a report of the findings and recommendations of the subcommittee to date:

Phase I - Inventory

An inventory format was developed and subsequently forms were distributed to the members of the subcommittee for completion. The format covered virtually all aspects of sewage treatment plant operation, including identification of owner, number and type of personnel, plant description, sampling procedures, parameters, analytical techniques, reporting frequency, report recipients, follow-up procedures, flow measuring techniques, inspection and follow-up by regulatory agencies, and regulatory agency staffing.

In most cases it was found that the plants are under the supervision of a graduate civil or sanitary engineer. As would be expected, the larger the plant, the larger the number of professional, supervisory personnel. No attempt has been made to determine the technical competence of incumbents. However, the subcommittee plans to evaluate the job specifications of plant supervisory personnel.

All plants inventoried submit operating reports on a monthly basis. The promptness of reporting and the reliability of the data were not included in the inventory. These items will be ascertained in the evaluation phase of the study. Data collection varies according to the size of the plant, with the larger plants having more sophisticated data collection systems than the smaller plants. In general, sampling and analytical procedures appear to be adequate, but suggestions for improvement of data collection will probably be forthcoming.

Procedures for reporting unusual operation situations (bypasses, breakdowns, etc.) are established. Whether these procedures are conscientiously observed was not indicated and written confirmation is required only in Virginia.

Inspection frequency varies from bi-monthly to "intermittent." It appears the inspection frequency is dependent on the manpower available in the regulatory agency.

The subcommittee is not, at this time, prepared to present a recommendation regarding inspection frequency. However, it does feel the following factors should be considered in preparing such a recommendation: size of plant, type of supervisory personnel, and the type of reliability of data reported to the regulatory agency.

Phase II - Evaluation and Recommendations

The subcommittee is presently evaluating the data and developing recommendations. The subcommittee is also continuing the plant visitation program, and additional data are developed in these visits. To date, the evaluation indicates the following weaknesses in the surveillance program in the conference area:

1. The plants are not inspected frequently enough by the regulatory agencies.

2. The monthly operating reports do not receive an adequate review.

3. There is inadequate dissemination of the surveillance data.

Recommendations

The subcommittee recommends that it be directed to explore in depth and report on the following aspects of waste treatment plant surveillance programs:

1. With respect to the operating agencies

Job qualifications

F. R. Blaisdell

Operator training and certification programs

Manpower

Data collection and reporting systems.

2. With respect to the regulatory agencies

Manpower

Job qualifications

Inspection and follow-up, including enforcement.

With respect to surveillance of sedimentation control programs, sediment control

The prime responsibility for implementation and administration of an urban sediment control program rests with the local governments. Such a program must include adequate laws and ordinances, funding, technical services, training, public information and education, interagency coordination, and research and development.

Jurisdictions without an ordinance should be required to adopt one designed for its specific needs, but compatible with the regional effort, and acceptable to its citizens. The cost of administration, technical assistance, training, operation, enforcement, education, and research, should be the responsibility of the various political subdivisions.

The actual cost for sediment control operations should be borne by the party or parties responsible for disturbing the land. Those who disturb the land must include items for the control of and prevention of erosion in the cost of doing business. A parcel of land that cannot be stabilized economically once the original surface is disturbed, should be set aside by the developer for other use.

Technical services are key elements in the implementation and operation of a sediment control program. There is a dearth of well-trained personnel to conduct such programs. Lack of such personnel will continue to be a critical element until an adequate cadre of well qualified design engineers, construction engineers, inspectors, and the like, are given orientation on technical and practical training. Such training may be obtained in formal courses, demonstrations, field tours, seminars, and workshops. Assistance for developing and conducting such activities can be made available from the Department of Agriculture (SCS), (Extension Services), universities and community colleges.

An informational and educational activity is a very important element of the program. Through this activity, interest is generated, knowledge is obtained, and desire is stimulated, all of which results in actions by the citizens, politicians, and others.

Interagency coordination is essential to the successful culmination of sediment control programs. Actions of each political strata may have an effect on others, either because of their geographical location or financial relationship.

Research and development are essential to any operational program. Every segment of government cannot afford such a program, nor would it be desirable. However, each segment may and should participate in the total research effort by the contribution of ideas, funds, technical services, land areas for demonstrations, etc.

Recommendations

1. The Metropolitan Washington Council of Governments should activate the Regional Sediment Control Advisory Committee as a permanent committee. Meetings should be held at least once every two months, or more often if the need is indicated. The membership should be broadened to be more representative of the agencies having an interest and responsibility in sediment control. This committee should be the coordinating force for establishing workable, well financed, and adequately staffed programs in each of the political areas within the conference jurisdiction.

2. Demonstration projects to evaluate and provide training opportunities for known or newly developed research techniques of sediment control should be established. Several of such projects could be:

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a. A demonstration project designed to develop a model silt trap appropriate for installation and operation in urban areas.

b. An economic survey and evaluation of benefits resulting from erosion control techniques.

c. A research project relating urbanization and resulting impermeable installations to flooding and sediment.

3. It is imperative that a cost-effective solution or solutions to the sediment problem and the relating of those solutions to the total water resource effort be undertaken immediately.

4. The manual developed by the National Sediment Conference should receive wide distribution and be used as a guide in the development of sediment control programs.

5. The development of a training or orientation program for inspectors, design engineers, construction engineers, and developers should be established. A grant, or grants to a community college, or colleges, to develop such a training program should be explored.

6. A public education and information program should be established in each political subdivision with coordination being provided by the Regional Sediment Control Advisory Committee.

7. Interagency relationships are most important in assuring maximum cooperation and production. The Regional

Sediment Control Advisory Committee should place this in a high priority for early accomplishment.

8. Each county or soil conservation district should establish a task force of interested citizens and technicians to evaluate program operations and assist the operating agencies in developing furture activities. A representative from each of the task forces should serve on the coordinating organization that should be developed by the Regional Sediment Control Advisory Committee.

9. Full-time sediment control inspectors should be employed by the counties conducting the sediment control program. Where it is not practicable for those inspectors to be employed full-time, a definite percentage of their time should be devoted to that special activity.

(The documents submitted by Mr. Blaisdell for the record are as follows:)

MEMORANDUM

SUBJECT: Potomac River Conference - Subcommittee Progress Report

TO: F. R. Blaisdell

FROM: Subcommittee on Surveillance of Waste Treatment Plant Operations

The Subcommittee, at its organizational meeting on August 12, 1969, unanimously agreed that its study be in two phases--an inventory followed by evaluation and recommendations. The evaluation will include visits to the principal water pollution control plants in the conference area. To date, the Subcommittee has visited the District of Columbia Water Pollution Control Plant and the Alexandria Sanitation Authority Plant. The following is a report of our findings to date:

PHASE I - INVENTORY*

An inventory format was developed at the first meeting and subsequently forms were distributed to the members for completion. Forms were completed for all plants in the conference area. These are: Virginia - Alexandria, Arlington County, Fairfax County (three plants), Fort Belvoir (two plants), and the Pentagon Plant. Maryland - Andrews Air Force Base (three plants, Naval Communications Station, and the Piscataway Plant. District of Columbia - D.C. Water Pollution Control Plant.

The inventory covered virtually all aspects of sewage treatment plant operation including identification of owner, number and type of personnel, plant description, sampling procedures, parameters, analytical techniques, reporting frequency, report recipients, follow-up procedures, flow measuring techniques, inspection and follow-up by regulatory agencies, and regulatory agency staffing.

In most cases, the plants are under the supervision of a graduate civil or sanitary engineer. As would be expected, the larger the plant, the larger the number of professional, supervisory personnel. No attempt will be made to determine the technical competence of incumbents. However, the Subcommittee plans to evaluate the job specifications of plant supervisory personnel.

All plants inventoried submit operating reports on a monthly basis. The promptness of reporting and reliability of the data were not included in the inventory. These items will be ascertained in the evaluation phase of the study.

Data collection varies according to the size of the plant, with the larger plants having more sophisticated data collection systems than the smaller plants. In general, sampling and analytical procedures appear to be adequate, but suggestions for improvement of data collection will probably be forthcoming.

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* The complete data will be included in the final report.

Procedures for reporting unusual operation situations (by-passes, breakdowns, etc.) are established. Whether these procedures are conscientiously observed was not indicated and written confirmation is required only in Virginia.

Inspection frequency varies from bi-monthly to "intermittent." It appears the inspection frequency is dependent on the manpower available in the regulatory agency.

The Subcommittee is not, at this time, prepared to present a recommendation regarding sampling frequency. However, it does feel the following factors should be considered in preparing such a recommendation: size of plant, type of supervisory personnel, and the type and reliability of data reported to the regulatory agency.

Follow-up and enforcement procedures are not well defined except in Virginia. The Virginia Water Control Board appears to have available to it adequate corrective measures consisting of:

1. Summons owner for hearing
2. Issue directives or orders
3. Directing legal counsel to secure correction of problem by injunction or other appropriate procedure.

PHASE II - EVALUATION AND RECOMMENDATIONS

The Subcommittee is presently evaluating the data and developing recommendations. The Subcommittee is also continuing the plant visitation program and additional data are developed in these visits.

To date, the evaluation indicates the following weaknesses in the surveillance programs in the conference area.

1. The plants are not inspected frequently enough by the regulatory agencies
2. The monthly operating reports do not receive an adequate review
3. There is inadequate dissemination of the surveillance data

RECOMMENDATIONS

The Subcommittee recommends that it be directed to explore in depth and report on the following aspects of waste treatment plant surveillance programs:

1. Operating Agencies

    Job qualifications
    Operator training and certification programs
    Manpower
    Data collection and reporting systems

2. Regulatory Agencies

    Manpower
    Job qualifications
    Inspection and follow-up, including enforcement

Respectfully submitted

C. E. Gross (Maryland)
F. Lee Ross (FWPCA)
John W. Zelinski (D.C. Dept. of Sanitary Engineering)
Arnold Speiser (D.C. Dept. of Public Health)
Millard H. Robbins, Jr., Chairman (Virginia)

REPORT ON SEDIMENT CONTROL
By the Sediment Subcommittee

RECOMMENDATION NO. 12 OF THE
POTOMAC RIVER - WASHINGTON METROPOLITAN AREA ENFORCEMENT CONFERENCE

The Conferees of the April - May 1969 Conference on Pollution of the Waters of the Potomac River - Washington Metropolitan Area recognized that sediment is an important factor affecting water quality management. They decided that the FWPCA, in cooperation with the States of Maryland, Virginia, the District of Columbia, and the Interstate Commission on the Potomac River Basin, would coordinate surveillance programs of sediment control within the area of interest -- the Potomac River and its tributaries between Little Falls and Hallowing Point. Included are all of the jurisdictions within the area encompassing the District of Columbia; Alexandria, Arlington and Fairfax Counties in Virginia; and Montgomery and Prince Georges Counties in Maryland. The erosion and sediment problems in the upper portion of the Basin, and its relation to the Washington - Metropolitan Area, will be considered at the Conference to be held on November 12-13-14, 1969.

The control of urban erosion and sediment within the Washington - Metropolitan Area will require a statement of intent by the governmental jurisdictions involved. It is the purpose of the Sediment Control Subcommittee, by this report, to review the activities of the various jurisdictions and to delineate areas of need.

SUMMARY

The prime responsibility for implementation and administration of an urban sediment control program rests with the local governments. Such a program must include adequate laws and ordinances, funding, technical services, training, public information and education, interagency coordination, and research and development.

The laws and ordinances of each jurisdiction should be under continuing review and updating, when the need is indicated. Jurisdictions without an ordinance should be required to adopt one designed for its specific needs, but compatible with the regional effort, and acceptable to its citizens.

The cost of administration, technical assistance, training, operation, enforcement, education, and research, should be the responsibility of the various political subdivisions.

The actual cost for sediment control operations should be borne by the party or parties responsible for disturbing the land. Such operations are similar to those of an industry, public or private. Industries producing water, air, or solid wastes pollution are required to pay for control measures necessary to meet laws and ordinances relating thereto. This is becoming "A Way of Doing Business." Therefore, those who disturb the land must include items concerning the control of and prevention of erosion in their cost of doing business. A parcel of land that cannot be stabilized economically once the original surface is disturbed, must be set aside by the developer for other use.

Technical services are key elements in the implementation and operation of a sediment control program. There is a dearth of well-trained personnel to conduct such programs. Lack of such personnel will continue to be a critical element until an adequate cadre of well-qualified design engineers, construction engineers, inspectors, and the like, are given orientation or technical and practical training.

Such training may be obtained from formal courses, demonstrations, field tours, seminars, and workshops. Assistance for developing and conducting such activities can be made available from the Department of Agricutlure (SCS) (Extension Services), universities, and community colleges.

An information and educational activity is a very important element of the program. Through this activity interest is generated, knowledge is obtained, and desire is stimulated, all of which results in action by the citizens, politicians, and others.

Interagency coordination is essential to the successful culmination of sediment control programs. Actions of each political strata may have an effect on others either because of their geographical location or financial relationship.

Research and development are essential to any operational program. Every segment of government cannot afford such a program nor would it be desirable. However, each segment may and should participate in the total research effort by the contribution of ideas, funds, technical services, land areas for demonstrations, etc.

Each of the foregoing subjects have been developed in detail for the various political subdivisions in the D.C. Metropolitan Area and are contained in the body of this report.

RECOMMENDATIONS

1. The Metropolitan Washington Council of Governments should activate the Regional Sediment Control Advisory Committee as a permanent committee. Meetings should be held at least once every 2 months, or more often if the need is indicated. The membership should be broadened to be more representative of the agencies having an interest and responsibility in sediment control. This Committee should be the coordinating force for establishing workable, well-financed, and adequately staffed programs in each of the political areas within the Conference jurisdiction.

2. Demonstration projects to evaluate and provide training opportunities for known or newly developed research techniques of sediment control should be established. Several such projects could be:

   (a) A demonstration project designed to develop a model silt trap appropriate for installation and operation in urban areas.

   (b) An economic survey and evaluation of benefits resulting from erosion control techniques.

   (c) A research project relating urbanization and resulting impermeable installations to flooding and sediment.

3. It is imperative that a cost-effective solution or solutions to the sediment problem and the relating of those solutions to the total water resource effort be undertaken immediately.

4. A national policy on all aspects of the sediment problem including adequate funding should be established.

5. The manual developed by the National Sediment Conference should receive wide distribution and be used as a guide in the development of sediment control programs.

6. The development of a training or orientation program for inspectors, design engineers, construction engineers, and developers should be established. A grant, or grants, to a community college, or colleges, to develop such a training program should be explored.

7. A public education and information program should be established in each political subdivision with coordination being provided by the Regional Sediment Control Advisory Committee.

8. Interagency relationships are most important in assuring maximum cooperation and production. The RSCAC should place this in a high priority for early accomplishment.

9. Each county or soil conservation district should establish a Task Force of interested citizens and technicians to evaluate program operations and assist the operating agencies in developing future activities. A representative from each of the Task Forces could serve on the coordinating organization that should be developed by RSCAC.

10. Full-time sediment control inspectors should be employed by the counties conducting the sediment control program. Where it is not practicable for those inspectors to be employed full time, a definite percentage of their time should be devoted to that special activity.

ENFORCEMENT CONFERENCE RECOMMENDATION 12

STREAM MONITORING REPORT

Prepared by

Stream Monitoring Sub-Committee

September 23, 1969

I. Introduction

Water quality monitoring has existed in the Washington Metropolitan area for many years. However, never have the activities of the many agencies involved been integrated into one complementary stream monitoring program. The Stream Monitoring Sub-Committee has endeavored to develop the first integrated documentation of the total activities of each of the participating activities. The stream monitoring inventory thus compiled presents a relatively complete picture of data collection activities by location, frequency, and parameter.

II. Stream Monitoring Inventory

Input to the inventory has been received from the following agencies:

D. C. Department of Public Health (DCDPH)
D. C. Department of Sanitary Engineering (DCDSE)
Federal Water Pollution Control Administration (FWPCA)
Maryland Department of Water Resources (MDWR)
Virginia State Water Control Board (VSWCB)
Baltimore District Office, Corps of Engineers (COE)

It is to be noted that several of the agencies are presently receiving stream monitoring data from miscellaneous local and Federal agencies. These stations have been included as part of the activities of the reporting agency.

A total of 90 stations are presently being operated in that portion of the Potomac Basin between Little Falls and Hallowing Point. The following tabulations provide a summary of the stream monitoring activities:

SUMMARY OF STATIONS - by Agency

DCDPH	11
DCDSE	24
FWPCA	16
MDWR	17
VSWCB	21
COE	1

SUMMARY OF STATIONS - by Frequency

Quarterly	17
Monthly	34
Weekly	33
Daily	1
Continuous	3
Other (Periodic)	7

SUMMARY OF STATIONS - by Parameter

Dissolved Oxygen	90
BOD	60
Fecal Coliform	53
Total Nitrogen	46
Total Phosphorus	14

Station locations, parameters, and frequencies as extracted from Appendix "A" and the accompanying map are summarized on page 3 The stations reported are considered "routine" in that they are generally

SUMMARY OF SAMPLING ACTIVITIES
IN ENFORCEMENT CONFERENCE AREA

	DCDPH					DCDSE					MDWR					FWPCA						VSWCB					COE			
PARAMETER*	W	M	Q	A	P	W	M	Q	A	P	W	M	Q	A	P	W	M	Q	A	P	C	W	M	Q	A	P	W	M	Q	D
Oxygen, Dis.	11					17				7			17				13				3		21				1			
Temperature	11					17				7			17			1	12				3		21							1
pH	11												17				13		2		1		21							1
BOD, 5 day	11					17				7						1			2				21				1			
Coliform,Fec.	10					16				7			17				2		2											
Coliform,MPN	11					16				7			17										21							
Coliform	10															1														
Total N						17				7							11										1			
Total P																	11		2								1			
Other Nutrients						17				7							11						21				1			
Alkalinity						17				7							10		2				21							1
Acidity																			2											1
Hardness																1			2											
Pesticides																	3		2											
Radioactivity																			2											
Oil	3																													
Phenols																			2									1		
Total Organic Carbon																	12													
DOC																	1													
MBAS																			2											
Chloride	1					17				7						1			2		3		21							1
Fluoride																			2											1
Color	10																													1
Odor																			2											1
Conductivity							1			1																				1
Suspended Solids	10																						21							
Dissolved Solids																			2								1			
Total Solids	10																						21							
Turbidity	11					17				7						1			2		1									1
Trace Elements																	1		2								1	1		
Plankton																														

*Frequencies

D-Daily Q-Quarterly W-Weekly A-Annual M-Monthly P-Periodic C-Continuous sampled in a consistent manner. Other sampling activities related to special situations (studies, emergencies, fish kills, etc.) have been conducted but are presently beyond the scope of this report.

Inventory information indicates that sampling duplication exists at four points and involves 12 stations, as reported by the participating agencies. Sampling schedules were not included in the initial inventory; consequently, a determination as to whether the duplication increases sampling frequency or results in the unnecessary expenditure of manpower and funds cannot be made at this time.

III. Inventory Review and Comments

The inventory has been conducted primarily to provide a base on which to build a comprehensive stream monitoring program. The adequacy of existing activities cannot be accurately determined until such time that total data needs are made known and are properly evaluated. Considerable information is being collected relative to organic pollutants; however, as can be seen from the lack of related parameters, bacterial, nutrient, sediment, and industrial oriented data is probably lacking.

Preliminary observations indicate that the majority of data being collected is not readily available for rapid dissemination and/or evaluation. This necessitates the adoption of a central data handling system, whereby each agency could effectively obtain and utilize data obtained by other participating agencies. For example, initial effort has been expended by the Interstate Commission on the Potomac River Basin toward the adoption of a central data storage and retrieval system. This system employs the STORET system presently being utilized by the Federal Water Pollution Control Administration and the U. S. Geological Survey. The adoption of this, or a similar system for storage of all data collected in the conference area should be thoroughly investigated by this sub-committee.

IV. Conclusions and Recommendations

The following conclusions and recommendations are made based on the findings of the Stream Monitoring Sub-Committee:

1. Specific data needs must be brought to the attention of the Stream Monitoring Sub-Committee.
2. The inventory must be thoroughly reviewed to determine the extent to which data needs can be met. Review may result in the addition and/or elimination of stations and parameters and the increase and/or decrease in frequencies.
3. Data collection and reporting must be fully coordinated. Coordination will involve time of sample collection, data reporting, Analytical Quality Control procedures utilized in analysis, central storage of data, river mile points, and dissemination of information. To accomplish this, the sub-committee requests the conferees to designate either the Federal Water Pollution Control Administration or the Interstate Commission on the Potomac River Basin as having this responsibility.

4. The sub-committee requests the conferees to direct it to proceed with the design of a fully integrated and coordinated stream monitoring program in accordance with the following schedule:

   a.) Basic inventory of existing activities
   Herewith submitted

   b.) Complete comprehensive inventory of existing activities
   January 1, 1970

   c.) Complete evaluation of total existing monitoring system and recommend necessary modifications
   April 1, 1970

   d.) Submit a recommended stream monitoring and data reporting system
   September 1, 1970

APPENDIX A

EXISTING WATER QUALITY MONITORING STATIONS
IN THE POTOMAC RIVER BASIN
FROM HALLOWING POINT TO LITTLE FALLS

STATION NO.	NAME OF BODY OF WATER	STATION LOCATION	AGENCY	REMARKS
E-1A	Potomac R.	Near Buoy No. 59, Hallowing Point	DCDSE	WPCD Station No. 9
E-1B	Potomac R.	Hallowing Point	FWPCA	CTSL No. 9
E-1C	Potomac R.	Buoy No. 59 at Hallowing Point	MDWR	Md. No. CH3
E-2	Pomonkey Cr.	Mouth Pomonkey Cr. 3/4 mile S. E. Fenwick	MDWR	Md. No. CH12
E-3	Pomonkey Cr.	Md. Route 227 Bridge	MDWR	Md. No. CH11
E-4	Potomac R.	Gunston Cove	FWPCA	CTSL No. 8A
E-5	Potomac R.	Fort Belvoir Jail - Whitestone Pt. 3/4 mile fr. left bank	VWCB	Va. Sta. No. POT - 92.26
E-6	Pohick Creek	Between Ft. Belvoir EM Club and White Cliff	VWCB	Va. Sta. No. POH - 1.57
E-7	Accotink Cr.	Between Army Marina and Practice Amphibian Landing Beach	VWCB	Va. Sta. No. ACO - 0.15
E-8	Accotink Cr.	Above Accotink Tidal Flats	VWCB	Va. Sta. No. ACO - 1.26
E-9	Accotink Cr.	Colchester Road on Fort Belvoir Reservation	VWCB	Va. Sta. No. ACO - 1.64
E-10	Long Branch	Route 637 (Cinderbed Road)	VWCB	Va. Sta. No. LOA - 1.07
E-11	Accotink Cr.	Route 611 (Telegraph Road)	VWCB	Va. Sta. No. ACO - 4.71
E-12	Sideburn Br.	Route 651 (Guinea Road)	VWCB	Va. Sta. No. SID - 1.46
E-13	Sideburn Br.	Route 654 (Zion Road)	VWCB	Va. Sta. No. SID - 2.76
E-14	Accotink Cr.	Beside Route 236 and I-495 Interchange	VWCB	Va. Sta. No. ACO - 16.39
E-15	Accotink Cr.	Route 699 (Prosperity Avenue)	VWCB	Va. Sta. No. ACO - 19.35
E-16	Accotink Cr.	Pickett Road Bridge	VWCB	Va. Sta. No. ACO - 21.19
E-17	Pohick Cr.	Midstream from observation tower	VWCB	Va. Sta. No. POH - 2.83
E-18	Pohick Cr.	Above Tidal Flats (Burned Bldg.)	VWCB	Va. Sta. No. POH - 3.94
E-19	Pohick Cr.	Route 611 (Colchester Road)	VWCB	Va. Sta. No. POH - 5.09
E-20	Pohick Cr.	Route 1 Bridge	VWCB	Va. Sta. No. POH - 5.70
E-21	Pohick Cr.	Below R.F.&P. Railroad Bridge	VWCB	Va. Sta. No. POH - 6.93
E-22	Pohick Cr.	Route 641 (Pohick Road)	VWCB	Va. Sta. No. POH - 8.00
E-23	Potomac R.	Buoy No. 66	VWCB	Va. Sta. No. POT - 93.10
E-24	Potomac R.	Near Marshall Hall, Maryland	DCDSE	WPCD Sta. No. 8
E-25	Potomac R.	Dogue Creek	FWPCA	CTSL No. 8
E-26	Dogue Cr.	0.38 Mile below Dogue Cr. STP outfall	VWCB	Va. Sta. No. DOU - 0.80
E-27	Potomac R.	End of Oil Line Pier downstream Marshall Hall	MDWR	Md. No. CH1
E-28	Little Hunting Creek	500 yds. below Little Hunting Cr. STP outfall	VWCB	Va. Sta. No. LIF - 1.19
E-29	Potomac R.	"FI" Buoy No. 22 off Mouth Piscataway Creek	MDWR	Md. No. PG6
E-30	Potomac R.	Piscataway Creek	FWPCA	CTSL No. 7
E-31	Piscataway R.	Md. Route 210	MDWR	Md. No. PG12
E-32	Piscataway R.	Md. Route 5	MDWR	Md. No. PG11
E-33	Potomac R.	Fort Washington	FWPCA	PRMS (Automatic Monitor)
E-34	Potomac R.	Near Fort Washington	DCDSE	WPCD Sta. No. 7
E-35	Potomac R.	Broad Creek	FWPCA	CTSL No. 6
E-36	Potomac R.	Fort Foote near Buoy No. 88	DCDSE	WPCD Sta. No. 6
E-37	Broad Creek	George Livingston Road	MDWR	Md. No. PG8
E-38-A	Potomac R.	Woodrow Wilson Bridge	FWPCA	PRMS (Automatic Monitor)
E-38-B	Potomac R.	Woodrow Wilson Bridge	FWPCA	CTSL No. 5
E-38-C	Potomac R.	Midchannel Woodrow Wilson Bridge	MDWR	Md. No. PG4
E-38-D	Potomac R.	Midchannel Woodrow Wilson Bridge	DCDSE	WPCD Sta. No. 5WB
E-39	Potomac R.	Near Buoy No. 8 below WPCD	DCDSE	WPCD Sta. No. 5
E-40	Potomac R.	Va. side of channel off WPCD	DCDSE	WPCD Sta. No. 4A
E-41	Oxon Creek	West of Forest Hgts., 0.5 mile from mouth	MDWR	Md. No. PG3
E-42	Oxon Run	South Capitol Street (Bridge)	DCDPH	
E-43	Oxon Run	Mississippi and Southern Avenue, S. E.	DCDPH	
E-44	Potomac R.	Above WPCD 250' offshore Naval Research Lab.	DCDSE	WPCD Sta. No. 4
E-45	Potomac R.	Bellevue	FWPCA	CTSL No. 4
E-46	Potomac R.	Near Buoy No. 11, Giesboro Point	DCDSE	WPCD Sta. No. 3
E-47	Anacostia R.	South Capitol Street Bridge	DCDSE	WPCD Sta. No. A1
E-48	Washington Channel	End of Harbor Police Pier, 5th and Maine, S. W.	DCDSE	WPCD Sta. No. WC
E-49	Anacostia R.	11th Street Bridge	DCDSE	WPCD Sta. No. A2
E-50	Anacostia R.	Sousa Bridge	DCDSE	WPCD Sta. No. A3
E-51	Anacostia R.	Center of East Capitol Street Bridge	DCDSE	WPCD Sta. No. [illegible]
E-52	Anacostia R.	Center of Benning Road Bridge	DCDSE	WPCD Sta. No. A4
E-53	Hickey Run	Hickey Lane Br. 150 yds. West Valley Rd.	DCDPH	
E-54	Hickey Run	New York Avenue, N. E.	DCDPH	
E-55	Hickey Run	Ivy City Railyard	DCDPH	
E-56	Anacostia R.	Center of New York Avenue Bridge	DCDSE	WPCD Sta. No. A5
E-57	Anacostia R.	Md. Route 202	MDWR	Md. No. PG1
E-58	N.W.Branch AnacostiaR.	Hyattsville, Maryland	FWPCA	FWPCA - USGS No. POT-6
E-59	N.W.Branch AnacostiaR.	Md. Route 29, Columbia Pike	MDWR	Md. No. M16
E-60	N.E.Branch AnacostiaR.	Riverdale, Maryland	FWPCA	FWPCA - USGS No. POT - 7
E-61	Paint Br.	Md. Route 29, Columbia Pike	MDWR	Md. No. M15
E-62	Potomac R.	Midway Black Buoy No. 3 and Red Buoy No. 4	DCDSE	WPCD Sta. No. 21
E-63	Potomac R.	Hains Point	FWPCA	CTSL No. 3
E-64	Potomac R.	Off East Potomac Park near Red Buoy No. 6	DCDSE	WPCD Sta. No. 2P
E-65-A	Potomac R.	14th Street Bridge	FWPCA	CTSL No. 2
E-65-B	Potomac R.	14th Street Bridge (North Bound)	DCDSE	WPCD Sta. No. 2H
E-66-A	Potomac R.	Arlington Memorial Bridge	FWPCA	PRMS (Automatic Monitor)
E-66-B	Potomac R.	Arlington Memorial Bridge	FWPCA	NWQN No. 130
E-66-C	Potomac R.	Arlington Memorial Bridge	DCDSE	WPCD Sta. No. 2M
E-67	Potomac R.	Near Roosevelt Island	DCDSE	WPCD Sta. No. 2
E-68	Rock Creek	Pennsylvania Avenue	DCDPH	
E-69	Rock Creek	Park Road (Bridge)	DCDPH	
E-70	Rock Creek	Military Road (Bridge)	DCDPH	
E-71	Rock Creek	Sherrill Drive (Bridge)	DCDPH	
E-72	Rock Creek	Md.-D.C. line, North end Rock Creek Park	MDWR	Md. No. M26
E-73	Rock Creek	D. C. - Montgomery Co. Line (Bridge)	DCDPH	
E-74	Rock Creek	Md. No. 28, Rockville Rd. Bridge	MDWR	Md. No. 25
E-75	North Br. Rock Creek	Md. No. 115, Bridge	MDWR	Md. No. 24
E-76	Rock Creek	Md. No. 115, Bridge	MDWR	Md. No. 23
E-77	Potomac R.	Below Three Sisters Island	DCDSE	WPCD Sta. No. 1
E-78	Potomac R.	Key Bridge	FWPCA	CTSL No. 1
E-79	Potomac R.	Below Fletcher's Boathouse	DCDSE	WPCD Sta. No. FBH
E-80	Pimmit Run	Glebe Road Bridge west of Chain Bridge	DCDPH	
E-81	Potomac R.	Chain Bridge	DCDSE	WPCD Sta. No. CB
E-82	Potomac R.	Next to GW Mem. Pkwy. above Brookmont, Md.	COE	

APPENDIX A

STATION NUMBER	PARAMETERS																														
	Alkalinity	BOD	CCE and CAE	Chloride	Coliform (Fecal)	Coliform (MPN)	Coliform (Total)	Color	Conductivity	Dissolved Oxygen	Hardness	NH_3	$NO_2 + NO_3$	NO_2 & NO_3	Oil	P Dissolved	P Ortho	P Total	pH Value	Sus. & Total Solids	Temperature	TKN	TOC	Turbidity		Group A	Group B	Group C	Group D	Group E	Group F
E-1A	W	W		W	W	W				W		W		W							W	W		W							
E-1B	M									M		M	M					M	M		M	M	M							M	
E-1C					Q	Q				Q									Q		Q										
E-2					Q	Q				Q									Q		Q										
E-3					Q	Q				Q									Q		Q										
E-4	M									M		M	M					M	M		M	M	M							M	
E-5	M	M		M		M				M		M		M			M		M	M	M										
E-6	M	M		M		M				M		M		M			M		M	M	M										
E-7	M	M		M		M				M		M		M			M		M	M	M										
E-8	M	M		M		M				M		M		M			M		M	M	M										
E-9	M	M		M		M				M		M		M			M		M	M	M										
E-10	M	M		M		M				M		M		M			M		M	M	M										
E-11	M	M		M		M				M		M		M			M		M	M	M										
E-12	M	M		M		M				M		M		M			M		M	M	M										
E-13	M	M		M		M				M		M		M			M		M	M	M										
E-14	M	M		M		M				M		M		M			M		M	M	M										
E-15	M	M		M		M				M		M		M			M		M	M	M										
E-16	M	M		M		M				M		M		M			M		M	M	M										
E-17	M	M		M		M				M		M		M			M		M	M	M										
E-18	M	M		M		M				M		M		M			M		M	M	M										
E-19	M	M		M		M				M		M		M			M		M	M	M										
E-20	M	M		M		M				M		M		M			M		M	M	M										
E-21	M	M		M		M				M		M		M			M		M	M	M										
E-22	M	M		M		M				M		M		M			M		M	M	M										
E-23	M	M		M		M				M		M		M			M		M	M	M										
E-24	W	W		W	W	W				W		W		W							W	W		W							
E-25	M									M		M	M					M	M		M	M	M							M	
E-26	M	M		M		M				M		M		M			M		M	M											
E-27					Q	Q				Q									Q												
E-28	M	M		M		M				M		M		M			M		M	M											
E-29					Q	Q				Q									Q												
-30	M									M		M	M					M	M		M	M	M							M	
E-31					Q	Q				Q									Q												
E-32					Q	Q				Q									Q												
E-33				C						C																					
E-34	W	W		W	W	W				W		W		W							W	W		W							
E-35	M									M		M	M					M	M		M	M	M							M	
E-36	W	W		W	W	W				W		W		W							W	W		W							
E-37					Q	Q				Q									Q												
E-38A				C						C																					
E-38B	M									M		M	M					M	M		M	M	M							M	
E-38C					Q	Q				Q									Q												
E-38D	W	W		W	W	W				W		W		W							W	W		W							
E-39	W	W		W	W	W				W		W		W							W	W		W							
E-40	W	W		W	W	W				W		W		W							W	W		W							
E-41					Q	Q				Q									Q												
E-42		W			W	W	W	W		W									W	W				W							
E-43		W			W	W	W	W		W									W	W				W							
E-44	W	W		W	W	W				W		W		W							W	W		W							
E-45	M									M		M	M					M	M		M	M	M							M	
E-46	W	W		W	W	W				W		W		W							W	W		W							
E-47	P	P		P	P	P				P		P		P							P	P		P							
E-48	P	P		P	P	P				P		P		P							P	P		P							
E-49	P	P		P	P	P				P		P		P							P	P		P							
E-50	P	P		P	P	P				P		P		P							P	P		P							
E-51	P	P		P	P	P				P		P		P							P	P		P							
E-52	P	P		P	P	P				P		P		P							P	P		P							
E-53		W			W	W	W	W		W					W				W	W	W			W							
E-54		W			W	W	W	W		W					W				W	W	W			W							
E-55		W			W	W	W	W		W					W				W	W	W			W							
E-56	P	P		P	P	P				P		P		P							P	P		P							
E-57					Q	Q				Q									Q		Q										
E-58	A	A	M,A	A	M,A			A		M	A							A	M,A	A	M			A		A		A			
E-59					Q	Q				Q									Q		Q										
E-60	A	A	M,A	A	M,A			A		M	A							A	M,A	A	M			A		A		A			
E-61					Q	Q				Q									Q		Q										
E-6[illegible]	W	W		W	W	W				W		W		W							W	W		W							
E-[illegible]	M									M		M	M					M	M		M	M	M							M	
E-64	W	W		W	W	W				W		W		W							W	W		W							
E-65A	M									M		M	M					M	M		M	M	M							M	
E-65B	W	W		W						W		W		W							W	W		W							
E-66A				C					C	C									C		C			C							C
E-66B		W	M	W			W	W	M	W	W		M			M		M	W		W		M	W					M		
E-66C	W	W		W	W	W				W		W		W							W	W		W							
E-67	W	W		W	W	W				W		W		W							W	W		W							
E-68		W			W	W	W	W		W									W	W	W			W							
E-69		W			W	W	W	W		W									W	W	W			W							
E-70		W			W	W	W	W		W									W	W	W			W							
E-71		W			W	W	W	W		W									W	W	W			W							
E-72					Q	Q				Q									Q		Q										
E-73		W			W	W	W	W		W									W	W	W			W							
E-74					Q	Q				Q									Q		Q										
E-75					Q	Q				Q									Q		Q										
E-76					Q	Q				Q									Q		Q										
E-77	W	W		W	W	W				W		W		W							W	W		W							
E-78	M									M		M	M					M	M		M	M	M							M	
E-79	W	W		W	W	W				W		W		W							W	W		W							
E-80		W		W		W				W									W		W			W							
E-81	W	W		W	W	W				W		W		W							W	W		W							
E-82	D	W		D	W	D		D	D	W	D	W		W		W	W	W	D		D	W		D			M	W			

REMARKS

Group A:

Acidity
MBAS
Total Alpha
Total Beta
Zinc

Group B:

ABS LAS (W)
Arsenic
Barium
Calcium (D)
CO_2 (D)
Cobalt
COD (W)
Lithium
Magnesium (D)
Potassium
Selenium
Silica (W)
Silver
Sodium (D)
Strontium
Sulfides
Vanadium
Zinc

Group C:

Aluminum
Cadmium (M)
Chromium (M)
Copper
Cyanide (M)
Dissolved Solids
Fluoride (D)
Iron
Lead
Manganese
Odor (D)
Phenols (M)
Sulfate

Group D:

CAE (biweekly)
CCE
DOC
Plankton
Sulfate (W)
Tot. PO_4 (W)

Group E:

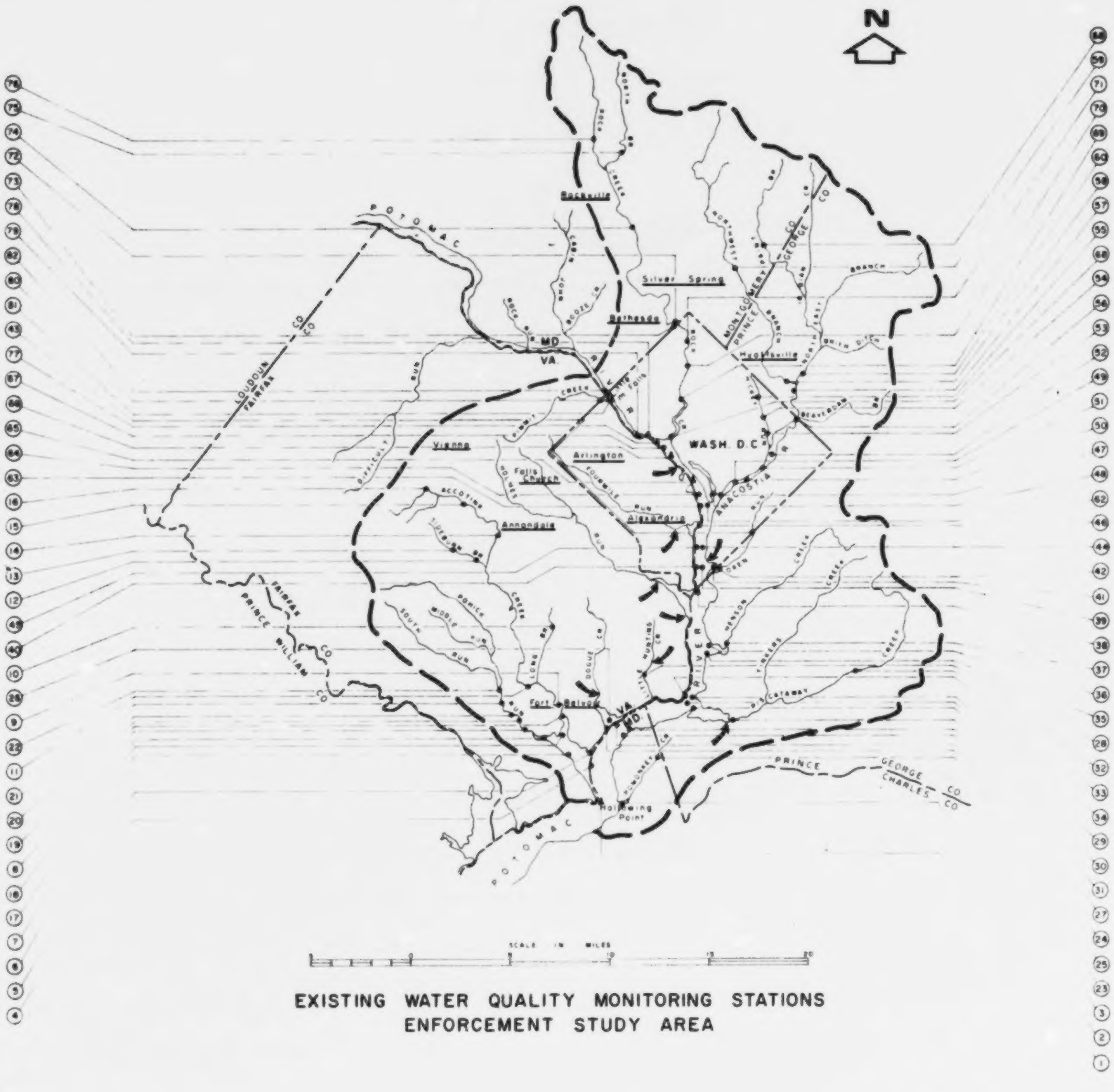
Chlorophyll
SECCHI DISC
TKN, MF

Group F:

Oxidation - Reduction Potential
Solar Radiation Intensity

Frequency Code:

A - Annually
D - Daily
M - Monthly
P - Periodic
Q - Quarterly
W - Weekly


N
Rockville
Silver Spring
Bethesda
Hyattsville
WASH. D.C.
Arlington
Vienna
Falls Church
Annandale
Alexandria
Fort Belvoir
Hallowing Point
POTOMAC
MD
VA.
LOUDOUN CO
FAIRFAX CO
PRINCE WILLIAM CO
MONTGOMERY CO
PRINCE GEORGE CO
CHARLES CO
ANACOSTIA R
RIVER
ROCK CR
PISCATAWAY
ACCOTINK
POHICK CREEK
DIFFICULT RUN
SCALE IN MILES
0
5
10
15
20
76
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EXISTING WATER QUALITY MONITORING STATIONS
ENFORCEMENT STUDY AREA

LEGEND

(45)— = MONITORING STATION NO E-45
➔ = SEWAGE TREATMENT PLANT
● = MONITORING STATION SAMPLED BY ONE AGENC
▲ = MONITORING STATION SAMPLED BY MORE THAN ONE AGENCY

WASHINGTON METROPOLITAN AREA ENFORCEMENT CONFERENCE

RECOMMENDATION NO. 12

REPORT OF SUBCOMMITTEE ON SEDIMENT CONTROL

INTRODUCTION

A pollutant, including heat, when discharged into water will degrade the quality of that water. Silt is the greatest single pollutant discharged into the Potomac River. It is eroded from the land in all sections of the Basin, transported and deposited in the Potomac, its tributaries and estuary. The erosion, transport and deposition of the silt (sediment) are complex processes and are affected by many climatic, physical, chemical and man-made factors.

The Conferees of the Conference on Pollution of the Waters of the Metropolitan Area recognized that sediment is an important factor affecting water quality management. They decided that the FWPCA, in cooperation with the States of Maryland, Virginia, the District of Columbia, and the Interstate Commission on the Potomac River Basin, would coordinate surveillance programs of sediment control. The area of interest at this time will be restricted to the Potomac River and its tributaries between Little Falls and Hallowing Point. (See attached map). This will include all of the jurisdictions within the area encompassing the District of Columbia; Alexandria, Arlington and Fairfax Counties in Virginia; and Montgomery and Prince Georges Counties in Maryland. The erosion and sediment problems in the upper portion of the Basin, and its relation to the Washington-Metro Area, will be considered at the Conference to be held on November 12-13-14, 1969.

The control of urban erosion and sediment within the Washington-Metro Area will require a statement of intent by the governmental jurisdictions involved. It is the purpose of the Sediment Control Subcommittee, by this report, to review the activities of the various jurisdictions and to delineate areas of need. In addition, specific recommendations contained in this report may be helpful to the various jurisdictions in the promotion of and the operation of their sediment control programs. Further, the information in this publication, with others, may be of assistance in bringing about an intelligent, region-wide effort to reduce soil erosion, thus lowering the amount of sediment pollution reaching the Potomac and its tributaries.

SUMMARY

The prime responsibility for implementation and administration of an urban sediment control program rests with the local governments. Such a program must include adequate laws and ordinances, funding, technical services, training, public information and education, interagency coordination, and research and development.

The laws and ordinances of each jurisdiction should be under continuing review and updating, when the need is indicated. Jurisdictions without an ordinance should be required to adopt one designed for its specific needs, but compatible with the regional effort, and acceptable to its citizens.

The cost of administration, technical assistance, training, operation, enforcement, education, and research, should be the responsibility of the various political subdivisions. Coordination of such activities should be at all levels of political strata.

The actual cost for sediment control operations should be borne by the party or parties responsible for disturbing the land. Such operations are similar to those of an industry, public or private. Industries producing water, air, or solid wastes pollution are required to pay for control measures necessary to meet laws and ordinances relating thereto. This is becoming "A Way of Doing Business." Therefore, those who disturb the land must include items concerning the control of and prevention of erosion in their cost of doing business. A parcel of land that cannot be stabilized economically once the original surface is disturbed, must be set aside by the developer for other use. Such case can be declared a loss rather than a profit. The cost to the developer can be related to sediment control.

Technical services are key elements in the implementation and operation of a sediment control program. There is a dearth of well-trained personnel to conduct such programs. Lack of such personnel will continue to be a critical element until an adequate cadre of well-qualified design engineers, construction engineers, inspectors, and the like, are given orientation or technical and practical training.

Such training may be obtained from formal courses, demonstrations, field tours, seminars, and workshops. Assistance for developing and conducting such activities can be made available from the SCS and Extension Service of the Department of Agriculture, universities and community colleges.

An information and educational activity is a very important element of the program. Through this activity interest is generated, knowledge is obtained, and desire is stimulated, all of which results in action by the citizens, politicians, and others.

Interagency coordination is essential to the successful culmination of sediment control programs. Actions of each political strata may have an affect on others either because of their geographical location or financial relationship.

Research and development are essential to any operational program. Every segment of government cannot afford such a program nor would it be desirable. However, each segment may and should participate in the total research effort by the contribution of ideas, funds, technical services, land areas for demonstrations, etc.

Each of the foregoing subjects have been developed in detail for the various political subdivisions in the D. C. Metropolitan Area and are contained in the body of this report.

RECOMMENDATIONS

1. The Metropolitan Washington Council of Governments should activate the Regional Sediment Control Advisory Committee as a permanent committee. Meetings should be held at least once every two months, or more often if the need is indicated. The membership should be broadened to be more representative of the agencies having an interest and responsibility in sediment control. This Committee should be the coordinating force for establishing workable, well-financed, and adequately staffed programs in each of the political areas within the Conference jurisdiction.

2. Demonstration projects to evaluate and provide training opportunities for known or newly developed research techniques of sediment control should be established. Several such projects

could be:

(a) A demonstration project designed to develop a model silt trap appropriate for installation and operation in urban areas. (See Exhibit No. 1)

(b) An economic survey and evaluation of benefits resulting from erosion control techniques. (Exhibit No. 2)

(c) A research project relating urbanization and resulting impermeable installations to flooding and sediment. (See Exhibit No. 4)

3. It is imperative that a cost-effective solution or solutions to the sediment problem and the relating of those solutions to the total water resource effort be undertaken immediately.

4. A national policy on all aspects of the sediment problem including adequate funding should be established.

5. The manual being developed by the National Sediment Conference should receive wide distribution and be used as a guide in the development of sediment control programs.

6. The development of a training or orientation program for inspectors, design engineers, construction engineers, and developers should be established. A grant, or grants, to a community college, or colleges, to develop such a training program should be explored. (See Exhibit No. 3)

7. A public education and information program should be established in each political subdivision with coordination being provided by the Regional Sediment Control Advisory Committee.

8. Interagency relationships are most important in assuring maximum cooperation and production. The RSCAC should place this in a high priority for early accomplishment.

9. Each county or soil conservation district should establish a Task Force of interested citizens and technicians to evaluate program operations and assist the operating agencies in developing future activities. A representative from each of the Task Forces could serve on the coordinating organization that should be developed by RSCAC.

10. Full time sediment control inspectors should be employed by the counties conducting the sediment control program. Where it is not practicable for those inspectors to be employed full time, a definite percentage of their time should be devoted to that specific activity.

STATUS OF SEDIMENT PROGRAMS IN D.C. METROPOLITAN AREA

DISTRICT OF COLUMBIA

For a number of years, there have been regulations on the books which could be construed as soil erosion prevention measures. However, water pollution prevention is not the primary object of these regulations. As a matter of fact, it may have been unintended or purely incidental.

Section 7504 of the Zoning Regulations prohibits (with exceptions) the stripping of top soil in certain specific areas of the City. Section 7505 requires the rehabilitation of excavations so that "The final slope or wall of any excavation or pit does not exceed the normal limiting angle of repose or slippage and is planted to prevent erosion."

Article 3, Section 20 of the Police Regulations, requires abutting property owners to afford protection from the run-off of soil from their lots into the street or other public space.

The need for better sedimentation control measures was recognized in the D. C. Water Quality Standards submitted to the Department of the Interior in June 1967. These standards committed the District to the establishment of measures designed to reduce the quantity of eroded soil washed into the streams of the District of Columbia. In accordance with its responsibilities for implementing the water quality criteria, the Department of Public Health submitted a draft of suitable amendments to the Health Regulations to the Mayor-Commissioner with the request that the regulations (Title 8, Chapter 2, part 8) be submitted to the City Council for promulgation. That was on April 18, 1968, one day after the District's Water Quality Standards were approved, with exceptions, by the Secretary of the Interior. (The regulations were developed by the Department of Public Health in consultation with the Interstate Commission on the Potomac River Basin).

Before submitting the regulations to the Council, the office of the Mayor-Commissioner circulated the draft to the various D. C. Government agencies that would have a role in the implementation of the proposed regulations. Comments made by these agencies were submitted to the Department of Public Health for evaluation and resolution. This was done at a meeting of representatives of the Department of Public Health and the departments submitting comments (General Administration, Licenses and Inspection, Sanitary Engineering, Highways and Traffic, and Buildings and Grounds). With the assistance of the Department of Public Health, Council staff further revised the regulations before presenting them at a public hearing held on March 12, 1969. It should be noted the regulations presented at the public hearing consisted of two parts - (1) sediment control and (2) control of pollution caused by vessels.

The sediment control provisions received the support of everyone who testified on that section. The vessel pollution provisions were the subject of some adverse comment and have not yet been approved by the Council even after several revisions. After two public readings, the sediment control section was approved by the Council on April 1, 1969 and signed by the Mayor-Commissioner on April 11, 1969 (Order of the Commissioner No. 69-162 of April 11, 1969). The effective date of the amendment is April 11, 1970. It states in part:

"8-2:803 Prevention of the Generation of Sediment.

No permit for a plan for land clearing, demolition, or construction activities shall be issued until, in the opinion of the Commissioner or his designated agent, such a plan contains adequate erosion prevention measures for the site in question.

(b) Land clearing, demolition and construction operations shall be conducted in such a manner as to prevent when possible and otherwise minimize the contamination of water courses by sediment bearing materials or other pollutants. Excavation, borrow pits stockpiled earthwork, graded or ungraded slopes or other areas, which may create a potential erosive condition, shall be maintained in such a manner as to prevent or minimize sedimentation of any water course. In the event of suspension of all or a portion of any construction operation, effective erosion control shall be maintained for the duration of said suspension. Where storm water flows away from any exposed land, the owner shall provide effective erosion control during the period said land is exposed.

(c) Storm water drainage shall not be allowed to be discharged in such a manner as to erode any land.

"8-2:804 Penalty.

Any person who violates any of the provisions of this Part, shall, upon conviction be punished by a fine of not more than $300.00. Each day shall be considered a separate violation."

It will be noted the regulation requires an unspecified level of performance rather than establishing measurable parameters of compliance. Accordingly, it was recognized the implementation and enforcement would require the establishment of guidelines to be followed by land owners and builders. Also, direct technical assistance would be needed by the Department of Public Health if it is to discharge its enforcement responsiblity. Such assistance was requested of the SCS State Conservationist for Maryland. He offered suggestions for developing a cooperative approach to solving the erosion problem and indicated that direct technical assistance might be available if the District could justify the additional manpower SCS would probably need. To date, the Department of Public Health, due to its own dearth of manpower, has not taken further action. However, it is anticipated that the necessary implementation procedure will be established prior to April 1970.

The Department of Sanitary Engineering is cooperating with the Montgomery County Sediment Control Task Force on a study of storm water quality in streams draining urbanizing areas. The study includes the evaluation of various sediment control procedures and should result in recommendations for reducing sediment runoff in the region.

COUNCIL OF GOVERNMENTS

The Metropolitan-Washington Council of Governments has established a Regional Sediment Control Advisory Committee (RSCAC). This Committee submitted its first report, "Sediment Control Activities in the Washington Metropolitan Area," to COG on December 12, 1968.

This Committee consists of representatives from many agencies and jurisdictions of the Metropolitan Area. There is an indication that COG would be receptive to accepting other qualified persons to serve on this Committee. This should be explored and recommendations made to include specific individuals representing various agencies.

The report includes most of the basic information required to develop a unified program of sediment control for the Metro Area. As is the case with any report of this type, updating is a continuing necessity. This Committee should provide the leadership in the development of working programs in all jurisdictions in the Metro Area.

MARYLAND

Maryland has enacted a law, title "Natural Resources," subtitle, "Patuxent River Watershed," which, requires, in part, ..."approved sedimentation and sewage disposal plans as a prerequisite to the construction of any road, building, or structure by any State, county, or municipality within the Watershed, and by providing for enforcement and penalties for violation." Consideration is being given to bringing those Maryland counties in the Potomac Basin under a similar law.

Montgomery County

The Washington Suburban Sanitary Commission has drafted regulations that would set soil erosion and siltation control rules for utility construction in the Patuxent River Basin of Montgomery and Prince Georges Counties.

Designed to set standards for construction to prevent soil erosion and resultant siltation, the regulations will apply primarily to conduit-pipeline construction carried on by water, sewer, gas, telephone and electric utilities in the bi-county area. Many of the conservation practices listed in the regulations already are used by utilities in Suburban Maryland.

Preparation of the rules has been coordinated with the Montgomery and Prince Georges County Soil Conservation Districts and with the Baltimore Gas and Electric Co., Washington Gas Light Co., Potomac Electric Power Co., and the Maryland State Roads Commission.

Following is the basic text of the regulations proposed by the WSSC staff:

"All utility construction shall be conducted in such a manner as to minimize erosion and control siltation.

"All sediment control structures, seeding, planting, mulching, or other siltation control works encountered during utility construction shall be preserved when practical and reasonable, and shall be restored promptly when damaged.

"The work shall be done so as to avoid cutting of vegetation and other disturbances of the terrain not actually necessary to the utility construction. Disturbed areas shall be restored as near as possible to the condition existing prior to the utility construction

When it is not reasonable or practical to do so and the disturbed area is subject to eriosion, the area shall be stabilized in accordance with the recommendations of the Soil Conservation District. The appropriate method for critical area stabilization shall be one of the following:

1. Sodding
2. Seeding
3. Mulching
4. Other planting or suface treatments recommended by the Soil Conservation District.

"Methods of critical area stabilization currently recommended by the Soil Conservation district are on file at the offices of the Washington Suburban Sanitary Commission and are available for inspection during normal working hours. Consultive and on-site assistance relating to unusual soil conditions which might affect stabilization methods is also available from the Soil Conservation District upon request."

The Maryland-National Capital Park and Planning Commission publication, "Sediment Control Program - Montgomery County, Maryland, March 1967," provides information on the sediment control program being operated by that County. This information should be updated.

VIRGINIA

Statutory Authority for Sediment Control

AUTHORITY VESTED IN THE STATE WATER CONTORL BOARD WHICH MAY BE USED FROM TIME TO TIME TO PREVENT, CONTROL AND ABATE POLLUTION FROM SEDIMENTATION

Sections 62.1 - 16(6) and 62.1 - 16(9) of the Code of Virginia are the definitions of "pollution" and "other wastes" respectively.

These definitions provide the basis for considering sediment a pollution causing agent.

Section 62.1 - 17 indicates that any owner discharging other wastes without obtaining a certificate from the Board is in violation of the Law. This violation is punishable under 62.1 - 44.

Section 62.1 - 30 requires that owners shall prevent other wastes from escaping, flowing, or discharging into any State waters when pollution would result.

POSITION OF STATE AGENCIES REGARDING CONTROL AND PREVENTION OF SEDIMENT DISCHARGED TO STATE WATERS

In certain specific cases, it may become necessary to invoke the Law to prevent or abate pollution from sediment discharge. However, it is the consensus that at the present time the State agencies should provide the technical and advisory assistance needed on the local level to prevent or abate pollution by the discharge of sediment. It is thought that more effective results will be obtained through education than through enforcement.

STATUTORY AUTHOIRTY FOR SEDIMENT CONTROL AS CONTAINED IN THE SOIL CONSERVATION DISTRICTS LAW OF VIRGINIA

Subsections c and d of Section 21-2 deal with the corrective methods and declaration of policy regarding the conservation of the soil and the prevention of floodwater and sediment damages, etc.

Sections 21-53 through 21-65 state the authority given to soil and water conservation districts.

A copy of the sections referred to above is attached as Exhibit No. 5.

Sections 21-66 through 21-105 contain provisions whereby (a) soil and water conservation district supervisors have the authority to formulate land-use regulations prescribed in ordinances, subject to a referendum in which at least two-thirds of the votes cast are in favor of the proposed ordinance; (b) court action when regulations are not observed, and; (c) Supervisors shall also provide by ordinance the establishment of a board of adjustment.

Also attached is a copy (Exhibit No. 6) of the organizational chart of the Commission showing its relationship to the districts.

Statutory authority is given only to the districts in the development and implementation of methods of preventing soil erosion and sedimentation, and such methods can be applied on privately owned land only with the owner's permission. The Commission can assist, advise and inform the districts; therefore, the relationship between the districts and the Commission is shown as a broken line. The solid line indicates the authority given to the Commission in the creation of a district and the adjustment of its boundary lines.

The Northern Virginia Soil and Water Conservation District through meetings, seminars, publications, working with public officials, contractors, soil conservation specialists and others is continuing to obtain substantial improvement in soil conservation practices of government agencies and private contractors.

"Rurban" - Northern Virginia Soil and Water Conservation District, "Pohick Newsletter" (Issues 1 and 2), and "Soil Limitations for Urban Development" - Northern Virginia Soil and Water Conservation District, contain sources of information and data that will be helpful to the COG-RSCAC. Other documents having relation to the Conference area are:

"Transcript of Proceedings by Corps of Engineers - Public Hearing on Cameron Run-Holmes Run Drainage Area"

"Erosion from Suburban Highway Construction" - January 1968 - Journal Proc. ASCE, Hydraulics Division

Certain immediate new data might be compiled in brief form, possibly including the following:

(1) Analysis of deposition points in the area,

(2) Analysis of financial damage in the area,

(3) Analysis of prevention measures now being practiced or potential measures in the area, and

(4) Analysis of erosion and sediment problems in the area.

FEDERAL LAWS, PROGRAMS AND REQUIREMENTS

Department of Agriculture

The Department has several of the most effective federal programs relating to sediment control. The agency within the Department responsible for carrying on these programs is the Soil Conservation Service (SCS). SCS was established under authority of the Soil Conservation Act (PL 46 74th Congress). Besides administering Departmental programs, SCS also provides technical help to locally organized and operated soil conservation districts and to local sponsors of watershed protection projects through its local offices.

A description of SCS Programs follow:

(1) National Cooperative Soil Survey Program
(16 USC 590a-590f)

This program, carried on in cooperation with State agricultural experiment stations and other agencies, provides soils information for community planning. The different kinds of soil are studied, mapped, and interpreted.

(2) Watershed Development and Flood Prevention Program (Watershed Protection and Flood Prevention Act; PL 83-566; PL 89-337; PL 89-4, sec. 417; PL 87-703)

This program provides technical and financial assistance to state and local organizations in planning, designing and installing watershed improvement works; in sharing costs of flood prevention, irrigation drainage, and sedimentation control; and in extending long-term credit to help local interests with their share of the costs, including costs of developing municipal and industrial water supplies.

The program is administered by the Soil Conservation Service of the United States Department of Agriculture, but assistance provided by it extends to watersheds experiencing urban development as well as rural areas. Projects under PL 566 are planned and carried out jointly by local, state (the state approves proposed projects), and federal governments. State agencies and qualified local organizations can sponsor or co-sponsor watershed projects. They include soil and water conservation districts, municipal and county governments, special purpose districts, irrigation and reservoir companies, water users' associations or similar organizations not operated for profit.

(3) Soil and Water Conservation Program (10 USC 590a-590f)

This program provides technical assistance required by landowners to solve land and water problems. The agency, principally through agreements with soil and water conservation districts, gives onsite help in developing, applying and maintaining sound soil and water conservation plans, and helps groups of individuals and organizations with programs for entire watersheds.

Department of Commerce

Economic Development - Grants and Loans for Public Works and Development Facilities Program. (Public Works and Economic Development Act of 1965; PL 89-136)

This program provides grants of up to 50% of the cost of public facilities including water and sewer systems, and flood control projects. Severely depressed areas that cannot match Federal funds may receive supplementary grants to bring the Federal contribution up to 80 percent of the project cost.

Department of Defense

The Department of Defense, through the Corps of Engineers, has the largest and oldest (initiating in 1824) Federal water resources programs. Special boards dealing with rivers and harbors and coastal engineering have been created within the Corps to give technical advice, and make recommendations with respect to projects.

The Corps administers the following two programs:

(1) Flood Plain Management Services Program (33 USC 709a,

This program includes preparation of flood plain information reports and special reports on flood hazards, and technical services and guidance toward reduction of flood damage potentials. Services include interpretation of basic data and assistance in planning for land use regulations, for possible flood modification structures, and for application of flood concepts.

Non-federal interests are encouraged to provide mapping, aerial photography, stream flow records, and related assistance.

(2) Limited Water Resources Development Projects
(33 USC 426g, 701s, 577, 603a, 701r)

This program provides the Chief of Engineers with general authority to undertake flood control, navigation, and beach erosion control projects of limited scope. Cooperation requirements for non-federal interests participating in beach erosion control projects include the provision of mapping, aerial photography, stream flow records, and related assistance. Beach erosion control projects provide federal assistance in studies of the problem involved and in the construction of works for the restoration and protection of shores against erosion by waves and currents.

Department of Housing and Urban Development (HUD)

This Department is concerned with problems in urban water resources needs in the areas of storm drainage, sewage, and water supply. Of the seven assistance programs to follow, the first six are administered by the Department's Community Resources Development Administration and the seventh by its Urban Management Assistance Administration.

(1) Advance Acquisition of Land (Housing and Urban Development Act of 1965, sec. 704, as amended, PL 89-117)

This program provides grants for the advance acquisition of land that communities will need for future construction of public works and facilities. Grants are made in amounts not to exceed the reasonable interest costs of financing the acquisition of land for a period of up to five years in advance of its use for approved public purposes.

(2) Basic Water and Sewer Facilities (Housing and Urban Development Act of 1965, sec. 702, as amended, PL 89-117)

This program provides grants covering up to 50% of land and construction costs for water and sewer facilities basic to area-wide community growth and development. The facilities must be consistent with a program for a coordinated areawide water and sewer facilities system which is part of the comprehensively planned development of the area.

(3) New Communities ("New Towns")
(HUD Act of 1968, Title IV, PL 90-448)

This program has two parts: (1) It provides guarantees of the obligations issued by private developers to finance new community development projects, thereby encouraging new community development; (2) it also provides supplemental grants to states and local bodies to provide basic water and sewer facilities, and open space land needed for new communities developed by private developers who receive the above guarantees. These supplemental grants cannot exceed 20 percent of the development, including the provision of low and moderate income housing.

(4) Open Space Land Program
(Housing Act 1961, Title VII, PL 89-70)

This program provides grants to help communities acquire and develop land to help provide needed park, recreation, conservation, scenic, and historic areas. Acquisition and development of open space land must be in accord with local and areawide comprehensive planning.

(5) Public Facility Loans Program
(Housing Amendments of 1955, Title II as amended, PL 84-345)

This program provides long-term loans (up to 40 years) covering up to 100% cost of a variety of public works projects including the construction of water and sewage facilities. Loan aid is available only for those parts of a project not covered by aid provided under other Federal agency programs.

Printed information available: Public Facility Loans Fact Sheet

(6) Public Works Planning Advances
(Housing Act of 1954, sec. 702, as amended, PL 83-560)

This program provides interest free advances to assist in the planning of essential public works and facilities. Planning advances are repaid when construction begins. Eligible projects must be constructed within a reasonable period of time.

(7) Comprehensive Planning Assistance
(Housing Act of 1954, sec. 701, as amended, PL 83-560)

This program provides grants to foster sound community, regional, and statewide comprehensive planning.

Grants of up to 2/3 (3/4 in some instances) of the cost of a planning project are made to supplement state and local funds for comprehensive planning areas having common or related development problems. Eligible activities include preparing general and functional plans, programming capital improvements, coordinating all related plans and activities of the state and local governments concerned, and preparing regulatory and administrative measures (ordinances, regulations, etc.). These activities may cover such subjects as land use, water and sewers, open space and recreation, and other aspects of physical and human development and governmental management.

Those eligible include: official state, metropolitan, and regional planning agencies; organizations of public officials; cities and counties in re-development areas; multistate regional commissions; and localities that have suffered a major disaster.

Department of the Interior

This Department has the widest scope of responsibilities in the field of water resources. These responsibilities range from construction projects for the reclamation of arid land and multiple purpose river basin development to massive grant programs for water pollution control and research. The agencies within the Department administering the assistance programs to follow are: Geological Survey, Bureau of Land Management, Bureau of Outdoor Recreation, Bureau of Reclamation, and Federal Water Pollution Control Administration (FWPCA).

The Geological Survey. This agency coordinates the efforts of the Federal agencies for compiling national water resources data. Among its other activities are studies and reports of the relation of water quality and sediment load to the various aspects of water resources development, and special hydrologic studies of the interrelationship between soils, vegetation, topography, and climate.

The Geological Survey carries out its complete program under the following title: Geologic, Mineral, Water Resource, and Topographic Surveys, Investigations and Research Program (43 USC 31, 41, 50).

Many of the Geological Survey's programs in topographic mapping, geologic mapping, geologic and mineral resources surveys and mapping, and water resources investigations are planned, conducted, and financed in cooperation with state and local governments.

Plans for cooperative programs are designed to contribute to national program objectives and responsibilities and at the same time to serve state or local needs.

Bureau of Land Management. The Bureau's primary function is to administer natural resources involved in about 800 million acres of Federal land. Two Bureau programs provide for the sale of Federal land to local governments.

These lands may be relevant to local sediment control programs as rights-of-way for storm sewers, flood plains, recreational areas, reservoirs, and other major sediment control structures.

(1) Real Property for Public Parks, Public Recreational Areas and Public Purposes Program
(43 USC 869 (1940); 43 USC 869 to 869-3 (Supp. V)

Under this program acquisition of sites to be used for public recreation control purposes, would cost local government agencies $2.50 an acre or the lease rental of $.25 per acre per year.

(2) Real Property for Residential, Commerial, Agricultural, Industrial, or Public Uses or Development Program (Public Sale Act of 1964; PL 88-603)

This program provides for transfer of title of federal lands that are required for orderly community growth and development, or are chiefly valuable for public uses. Federally-owned public domain land may be available for use, lease, or purchase to qualified governmental agencies at the appraised fair market value.

Federal Water Pollution Control Administration. FWPCA was created by the Water Quality Act of 1965 to administer the Federal Water Pollution Control Act, formerly handled by the Public Health Service. The agency was transferred to the Department of Interior by Reorganization Plan No. 2 of 1966, effective May 10, 1966.

Bureau of Outdoor Recreation. This agency carries out the work prescribed in the Land and Water Conservation Fund Act of 1965. The Act provides for a program of financial assistance grants for outdoor recreation facilities.

Outdoor Recreation Financial Assistance Program
(Land and Water Conservation Fund Act of 1965; PL 88-578)

Financial assistance is available to states and their political subdivisions for planning, acquiring, and developing all types of outdoor recreation areas and facilities. Grants are made on a 50-50 matching basis for approved projects. If planned to accommodate required water and land conservation principles these areas can be an integral part of areawide sediment control efforts.

Basic program objectives are:

a. Prime importance is attached to projects in areas where concentration of people live.

b. Projects must be available for use by the general public.

c. Development of basic rather than elaborate facilities is favored.

d. Projects furnishing a broad range of outdoor recreation uses and experiences are preferred.

Approved projects include multipurpose metropolitan parks, snow ski areas, urban playgrounds, golf courses, swimming pools, hiking and bicycling paths, nature interpretation areas, fishing piers, marinas, and boat launching ramps.

Bureau of Reclamation. The Bureau has responsibility for locating, constructing, operating, and maintaining works for the storage, diversion, and development of waters for the reclamation of arid and semi-arid lands in Western states. Abating sedimentation is an element of the Bureau's program for carrying out this responsibility.

Department of Transportation

The Department of Transportation provides a program which is of particular interest to those local agencies which wish to combine sedimentation and soil erosion prevention with airport construction.

Federal Aid Airport Program (FAAP)
(Federal-Airport Act,1946, as amended)

This program provides financial aid, conveyance of federal land, and other assistance to public agencies in the planning, acquisition, and development of public airports and heliports. Property interests in federal lands as well as federal grants, are available for projects that are essential to the operation and safety of airports.

Grants can be made for land acquisition; site preparation; drainage work either on or off the airport site; construction, alteration, and repair of runway, taxiways, aprons, and roads within airport boundaries; erosion control; seeding and sodding; and certain other on-site and off-site work.

The Federal Government generally provides 50 percent of the cost and the local public authority provides the remaining 50 percent.

The Water Quality Act of 1965 required all States to enact water quality standards for interstate water within two years (subject to review and approval of Secretary of the Interior) or have the standards created by the Federal Government. Sediment control is now a stated policy for all Federal and Federally aided operations by Executive Order 11288 issued through the authority of the Water Quality Act of 1965. The order requires departmental review of all Federal affected operations having a significant potential for reduction of water pollution by sediment. The Departments may prescribe remedial measures if necessary. This should prove especially significant in connection with sediment problems related to urban and suburban highway construction.

Bureau of Public Roads, Department of Transportation

Direct Federal construction of highways is controlled by Bureau of Public Roads "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-61)" and supplemental specifications dated May, 1969, which modifies landscape planting procedures. Standard Specification FP-61 was amended by BPR Industrial Memo 20-1-68 dated March 6, 1968, Subject: Prevention, Control, and Abatement of Water Pollution by Federal Activities -- Executive Order 11288, Application to Direct Federal Construction Contracts. Erosion control is implied in overall landscaping and development objectives. The specifications require the contractor to conduct and schedule operations to avoid or minimize siltation of streams, lakes, and reservoirs, and erosion damage to embankments. Sediment control is incorporated by proper provision for drainage, design, and fitting landscape development. These specifications will be superceded by Standard Specification FP-69 to be used on all construction projects after January 1, 1970. The revised specifications will contain specific provisions for control of silt and sediment on all direct Federal contracts involving highway construction.

Cooperation of Federal, state and local water resource, soil conservation, and irrigation agencies is encouraged in the planning and location stage.

Bureau of Reclamation and Soil Conservation Service sediment control procedures are incorporated into design of highway drainage structures, as well as timely landscaping and seeding concurrent with construction.

The Bureau of Public Roads emphasizes erosion control on Federally financed highway construction by issuing memorandums and instructional material, by reviewing plans and specifications, by conducting schools and conferences, and by making inspections of construction work done by State and local agencies. The Bureau of Public Roads has requested all State Highway Departments to review and revise, if necessary, sections of their specifications related to control of erosion. A publication, "Guidelines for Minimizing Possible Soil Erosion from Highway Construction," Report to Congress, July 1, 1967, has been prepared by the Bureau in cooperation with the U. S. Department of Agriculture. The report was prepared as an aid to the preparation of appropriate highway construction specifications and design procedures, and included general guidelines for minimizing erosion in planning, location, design, construction, maintenance, research, and development. Copies of the "Guidelines" have been distributed to all road building agencies.

Corps of Engineers Dredging Projects

All channel dredging projects performed by the Corps of Engineers are reviewed by FWPCA for impact on water quality and other water pollution aspects. Dredging under contract is reviewed by the Corps which issues a permit for the specific operation. The Federal Water Pollution Control Administration review presently includes a general review of sediment control procedures, and effect on fish, shellfish, and wildlife. Standard design procedures for sediment control stuctures and operation have been developed by the Corps.

The Federal Water Pollution Control Administration is presently developing a nationwide document of water quality considerations for Corps construction and dredging operations for us in issuance of permits by the Corps on a nationwide basis. The present unrevised document includes provisions for:

1. Cooperative action of local, State, and Federal pollution, resource, and health agencies.

2. FWPCA concurrence in project implementation and permits contingent on full compliance with existing applicable local, State and Federal laws and regulations. Concurrence is automatically terminated when violations occur in any program phase, and responsible corrective action by the sponsor becomes in order.

3. Dredging and disposal operations must be carried out so as to minimize degradation of water quality, damage to aquatic biota, and pond bottom fauna.

4. Construction, design, operation, and maintenance of sediment control devices.

Technical Assistance

Federal technical assistance is largely investigative and advisory in nature providing tedhnical and informational aid supplemented by published articles, reports, and surveys; as well as grants-in-aid, loans, shared revenue, advances, and guarantees.

Federal expenditures affecting local government finances include contractual payments or grants to public educational institutions for research, and the training of manpower in specialized areas. Financial and technical assistance is primarily funneled through the Soil Conservation Service of the Department of Agriculture; the Community Resources Development Administration and the Urban Management Assistance Administration of the Department of Housing and Urban Affairs, and the FWPCA and Geological Survey of the Department of the Interior.

Professional Personnel

Federal agencies and programs offering professional assistance include:

Department of Agriculture- Soil Conservation Service
  The National Cooperative Soil Survey Program
  Resource Conservation and Development Program
  Small Watersheds Projects Program

Department of Defense - The Chief of Engineers
  Flood Plan Management Service Program

Department of the Interior - U. S. Geological Sufvey
  Geological, Mineral, Water Resource, and
  Topological Surveys, Investigations and Research Programs

Soil and water conservation districts offer technical assistance to local areas through the Soil Conservation Service of the United States Department of Agriculture. The Agricultural Extension Service, operating through local universities, makes technical research available to local areas. Chief among the cooperative agencies with the independent State subdivisions of Soil and Water Conservation Districts is Soil Conservation Service of the U. S. Department of Agriculture. Many others, such as Forest Service, Bureau of Land Management, the Agriculture Stabilization and Conservation Service, Bureau of Sport Fisheries and Wildlife, work closely with and provide services to Districts. Written memorandums of understanding with many of these agencies, outlining working relationships, allow Districts to maintain direction of their programs while securing help they need.

Training

The Soil Conservation Service, Federal Water Pollution Control Administration, and respective state natural resources agencies can help in providing the needed training.

At the Federal level the FWPCA (Department of the Interior) supplements state training programs by offering courses in water pollution control at five training center locations in the United States. FWPCA also provides grants and fellowships in order to increase substantially the number of trained professional and subprofessionals engaged in pollution control. Training grants are available to educational institutions for developing, improving, or expanding training opportunities for individuals taking courses in operations, research, administration or teaching in the field of water pollution control.

Research

Various Federal agencies (Agricultural Research Service, Soil Conservation Service, U. S. Geological Survey) are engaged in research projects on sediment control procedures and resources. FWPCA supports research and development, and basic demonstration projects and studies aimed at minimization of sediment erosion impact, and establishment of new methods of sediment control. The Bureau of Recreation also conducts studies on the related sediment control research.

The U. S. Geological Survey and Agricultural Research Service have research underway germane to the problems of runoff and siltation in urban areas. USGS activities include various research works of sediment aspects of highway construction, sedimentation mechanics, studies of specific watersheds, and sediment transport. USGS made a two-year sediment study in cooperation with the Interstate Commission on the Potomac River Basin on sediment sources and transport in the Potomac River Basin. Findings of the study are published in "Preliminary Study of Sediment Sources and Transport in the Potomac River Basin," INCOPOT Technical Bulletin 1963-11, June 1963. The ARS is greatly involved in erosion and sediment control research programs. Research is performed on watershed and hydrologic studies in participation with Land Grant Universities. A National Runoff and Soil-Loss Data Center is maintained at Purdue University for assemblage and summarizing USDA studies. The Soil Conservation Service works with local soil (and water) conservation districts in planning, control and use of agricultural lands, watershed protection, construction projects, research and conservation development projects, and related sediment control aspects. Under provisions of the USDA Flood Control and Soil Conservation Program, several small watersheds in the Potomac Basin have been studied. The Soil Conservation Service served in an advisory capacity during preparation of sediment control standards for Montgomery County, Maryland.

FWPCA has given a grant to the National Association of Counties to develop a "Community Action Program for Sediment Control" as a model program. These guidelines were the focus of the National Counference on Sediment Control held on September 14-16, 1969, in Washington, D. C. A draft of the guidelines were reviewed at the Conference by selected local, State, and county authorities in "workshop" sessions and summaries of suggested revisions were made.

The summaries (discussion papers) will be published as proceedings of the Conference.

Sediment Control Needs and Recommendations

1. Research for improvement of present erosion-control methods to provide more economical and effective means for preventing erosion during and subsequent to construction. Needs include methods and sequence of construction, development of protective covers and treatment of soils, data on amount of sediment transported to streams due to erosion during construction, effects on water quality relative to natural conditions, and extent of controls needed for sediment contribution during construction.

2. Additional cooperative effort between State Highway Departments and USDA be actively promoted, especially in development of vegetation control and in improvement in soil conservation methods.

3. A continuing liaison and cooperation between design and research engineers, regulatory agencies, builders, developers, and maintenance forces be maintained.

4. A continuing and broadened program of public information, research and action be established and maintained. Such programs should include the use of conservation principles in land use planning, and public purchase of "open space" lands. Federal, State, and National organizations should provide for a free exchange of ideas, including model ordinances for aid to local officials.

NEEDS

Laws and Ordinances

The prime responsibility for the administration and implementation of an urban sediment control program should be that of the local governments. The laws and ordinances of each jurisdiction should be reviewed and recommendations made concerning the need for alteration, if required. Where a local jurisdiction does not have an ordinance, recommendations concerning steps to be taken to develop a satisfactory ordinance should be made.

A review should also be made of the Federal laws, rules and regulations, relating to sediment control, such as those of the Bureau of Public Roads, and their impact on programs operated by the States.

A careful examination of all federal and state programs and policies directly or indirectly affecting sediment control operations should be examined and recommendations made that will assure as completely a coordinated effort as reasonably possible.

Funding

Urban sediment programs should be financed by the party or parties responsible for disturbing the land. Such operations are similar to those of an industry. Industries that produce water, air and solid wastes pollution are being required to pay for such control measures. This is becoming "A Way of Doing Business."

However, this cost should be restricted to their operations. The cost of education, research, training, operation, and enforcement of a sediment control program should be the responsibility of the various political subdivisions.

This is an area that requires much study. Many possibilities exist. An effort should be made to enumerate and evaluate these possibilities.

In view of the facts that (1) the total water resources budget of the Nation and of the Washington, D. C. area (water supply, waste disposal, water recreation, hydro-power generation, flood control, navigation, fish and wildlife propagation, etc.) represents a substantial portion of total governmental expenditures and a significant portion of non-governmental expenditures and that (2) the severe erosion and sedimentation problems being experienced in the Washington area as well as upstream are affected by, or affect, each of these other water-related activities to which substantial governmental expenditures are being directed, it is desirable that efforts be directed toward finding cost-effectiv solutions to our total water resources effort. A national policy on all aspects of the sediment problem has yet to be formulated let alone backed up by financial resources. Such a policy might include the following:

1. Additional federal or state support for basic and applied research in the area of sediment control should be provided.

2. Additional funds should be made available for pursuing sediment control planning activities in multi-jurisdictional areas.

3. Funding might be made more readily available for the conduct of the monitoring activities necessary to provide basic data for all control purposes.

4. The sediment control agencies have identified the need for well-trained sediment control technicians in the public sector and improved design personnel in the private sector; substantial

expenditures, perhaps enhanced from state or federal sources, will be necessary to develop the pool of trained personnel.

5. State or federal assistance in the construction of sediment control structures might be expanded. Federal and State agencies responsible for funding highway and other public facilities construction programs might be encouraged to place increased emphasis on sediment control features in their review.

6. An expanded program of public information and education should be funded and undertaken at all government levels.

Training

The objective of a training program should be to orient and train personnel working for state or local agencies and land development personnel in proper land use procedures. This educational program should be a continuing effort at all stages in the total sediment control program. Potential clientele for such a program should include:

(a) inspectors
(b) design engineers
(c) construction engineers
(d) developers

The method of their training should include:

(a) formal courses
(b) demonstrations, field tours, and
(c) seminars and workshops

The development of such programs with assistance from SCS, Extension Service, state universities, and community colleges should be explored.

Public Information and Education

General public educational programs should be developed, or at least correlated, on a metropolitan area basis since most educational media, such as newspapers, radio and television, have area-wide coverage. This will provide for uniformity and create less confusion. Local educational forces can be most effective and should be encouraged to cooperate within the framework of a region-wide program.

The Interstate Commission on the Potomac River Basin conducts educational programs, distributes reports, produced a film, "MUD", and is in the process of producing another film on sediment control directed to the county officials and builders.

The National Association of Counties, SCSA, and S. C. Districts held a meeting in Washington on September 14-16, 1969. The purpose of this meeting was to have an exchange of ideas from which a manual on sediment control, for use by county officials and others, could be developed.

Too few administrators, professionals, politicians, and lay people, not engaged in sediment control activities, have had the opportunity to become knowledgeable concerning the problems, destruction, and cost of land erosion. Land erosion has been, for many years, considered a rural problem. Land erosion occurs in rural areas, but quite often the silt, thus created, is deposited as sediment many miles downstream. The resulting damage may harm fish and plant life, interfere with navigation, increase cost of water treatment plant operations, fill marsh lands, limit recreational uses, clog sewers, create unsafe conditions on roads, and pollute the water.

All of these harmful effects have been magnified, in recent years, by the disturbance of land to create shopping centers, sudivisions, roads, schools, and by other construction activities.

Therefore, the manual, to be developed as a result of the National Sediment Conference, for the guidance and education of county officials and others, is particularly timely.

Interagency Relationship

Coordination of federal, state, and local sediment control programs will assure maximum benefits. The methods of such coordination and institutional arrangement should be reviewed and recommendations relating to alternatives made.

The establishment by COG of the RSCAC should be the first action taken toward accomplishing interagency cooperation.

Research and Demonstrations

Erosion of the soil and consequent sediment pollution is caused by rainfall and uncontrolled runoff of water. Basically two means are available to effect control: (1) Vegetation, which blankets the soil and prevents the erosive forces of the water from reaching the soil particles and (2) Mechanical structures which dissipate the forces of the water. Many of the practices based on these two means, which were developed to combat rural erosion, can be used under urban conditions.

However, there are many gaps in the information concerning soil erosion, its transport, and sediment. A thorough review of this problem should be made and recommendations concerning the need for research in specific areas, including priority of need, should be tabulated.

There is a need to establish demonstration watershed projects in Maryland, Virginia, and the District of Columbia. These would not only provide opportunities to use existing methods of control but also provide an opportunity to place in operation information derived from research.

Personnel

Although all other elements of a successful sediment control program have their respective values, the need for well-qualified personnel to perform the chores in the conduct of such a program is most important. A listing of categories of personnel, the time required to train each category, and incentives to attract these should be developed.

The objective of such a program should be: (1) Recognize the problem, (2) Adopt a sediment control program, (3) Provide coordination - all governmental levels, (4) Establish cooperation - developers and landowners, (5) Promote training programs, (6) Stress need for public information and education and (7) Recommend areas for research and development.

DATE TYPED: 10/10/69

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ACKNOWLEDGEMENT

This report reflects the thinking of several persons other than the Subcommittee. Carl D. Fetzer, Soil Conservation Service, U. S. Department of Agriculture; Kenneth Karch, Metropolitan Washington Council of Governments; S. Mason Carbaugh and J. B. Wilson, Jr., Virginia Soil and Water Conservation Commission: and Stuart Finley, Northern Virginia Soil and Water Conservation District provided information and made many constructive suggestions during its preparation. The Subcommittee is most grateful for their fine cooperation.

Marshall T. Augustine, Maryland Department of Water Resources
A. W. Hadder, Virginia State Water Control Board
R. R. Jennings, Virginia State Water Control Board
Arnold Speiser, D. C. Department of Public Health
Richard Watkins, Federal Water Pollution Control Administration
George Carley, Chairman, Interstate Commission on the Potomac River Basin

EXHIBIT NO. 1

URBAN SILT TRAP

Purpose:	To design and construct an urban silt trap which can be installed in a typical urban situation to trap depositions of sediment before this material can be transported downstream to lakes, estuaries, or stream valleys.
Criteria:	The device must be small, economical, capable of being easily emptied and maintained, attractive, safe, automatic, and effective.
Operation:	Routine emptying of the silt trap by the County Sanitation Division will relieve lakes, estuaries, and streams of sedimentation which is often awkward and expensive to remove.
Financing:	The Northern Virginia Soil and Water Conservation District would be willing to prepare an application for a FWPCA Demonstration Grant if real interest can be elicited in advance discussions.

EXHIBIT NO. 2

ECONOMIC BENEFITS

Purpose:	To develop data and an analysis which would indicate the benefit/cost ratio for certain common erosion control practices to provide support for erosion control programming.
Criteria:	The economic information must be simple enough to make it universally useful, must be comprehensive enough to provide validity, and should directly relate erosion control measures and the benefits resulting in terms of diminished sedimentation, soil conservation, and other benefits.
Reference:	A start has been made in the publication, "The Effect of Urbanization on Sedimentation in the Clinton River Basin."
Financing:	If such an economic study would be considered a research project, it might be funded under the existing FWPCA program. Or other methods of funding might be discovered.

EXHIBIT NO. 3

URBAN EROSION TRAINING PROGRAM

Purpose:	To provide an on-going training program for local officials, planners, and technicians on techniques of preventing erosion and sedimentation.
Criteria:	The course should be brief, practical, authoritative, with a prepared curriculum and supporting printed materials and films and other visual aids.
Operation:	Once the program is organized and shaken down, it should be made available to such localities as show sufficient interest to pay part or all of the cost for the local presentation.
Financing:	The initial organization including printed materials and visual aids should be financed by a public agency, perhaps as a Training Program of FWPCA. The individual or organization selected should be thoroughly familiar with the subject area and an educational organization such as a community college, college, or university might be appropriate.

EXHIBIT No. 4

ZONING RESEARCH PROJECT

Purpose:	To determine how much flooding, erosion, and sedimentation result from the installation of impermeable areas in an urban environment. What is the maximum impermeable area ratio? How do off-site drainage costs relate to impermeable area construction? What are reasonable guidelines for official agencies responsible for zoning?
Criteria:	The findings should be precise and easy to use. They should be practical enough to permit urban development and yet rigid enough to prevent urban conservation problems.
Procedure:	This research project can best be undertaken in an area where extensive work has been done in the field of urban erosion and sedimentation. Fairfax County is such an area. The Northern Virginia Soil and Water Conservation District and Fairfax County have extensive records of good and bad development. The U.S.G.S. has an extensive gauging program.
Financing:	The NVS-SCD would be prepared to make an application for a research grant from the FWPCA if advance interest justifies.

EXHIBIT NO. 5

SECTIONS OF STATUTORY AUTHORITY FOR SEDIMENT CONTROL IN VIRGINIA

The appropriate corrective methods. That to conserve soil resources and control and prevent soil erosion and prevent floodwater and sediment damages, and further agricultural phases of the conservation, development, utilization, and disposal of water, it is necessary that land use practices contributing to soil wastage and soil erosion be discouraged and discontinued, and appropriate soil conserving land use practices and works of improvement for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water be adopted and carried out; that among the procedures necessary for widespread adoption are the carrying on of engineering operations such as the construction of terraces, terrace outlets, check dams, desilting basins, floodwater retarding strucutres, channel improvements, floodways, dikes, ponds, ditches, and the like; the utilization of strip cropping, lister furrowing, contour cultivating, and contour furrowing; land drainage; land irrigation; seeding and planting of waste, sloping, abandoned, or eroded lands to water-conserving and erosion-preventing plants, trees and grasses; forestation and reforestation; rotation of crops; soil stabilization with trees, grasses, legumes, and other thick growing, soil-holding crops; retardation of runoff by increasing absorption of rainfall; and retirement from cultivation of steep, highly erosive areas and areas now badly gullied or otherwise eroded.

Declaration of Policy. It is hereby declared to be the policy of the Legislature to provide for the conservation of the soil and soil resources of this State, and for the control and prevention of soil erosion, and for the prevention of floodwater and sediment damages, and for furthering agricultural phases of the conservation, development, utilization, and disposal of water, and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands, and protect and promote the health, safety, and general welfare of the people of this State.

POWERS OF DISTRICTS AND SUPERVISORS

Body Politic and Corporate. A soil and water conservation district organized under the provisions of this chapter shall constitute a governmental subdivision of this State, and a public body corporate and politic, exercising public powers; and such district, and the supervisors thereof, in addition to the powers granted in others sections of this chapter, shall have the powers set out in the following sections of this article. (1938, p. 735; Michie Code 1942, § 1289 (20); 1964, c. 512)

§ 21-54. Surveys and dissemination of information. They shall have power to conduct surveys, investigations, and research relating to the character of soil erosion and floodwater and sediment damages, and to agricultural phases of the conservation, development, utilization, and a disposal of water, and the preventive and control measures and works of improvement needed, to publish the results of such surveys, investigations, or research, and to disseminate information concerning such preventive and control measures and works of improvement; provided;

however, that in order to avoid duplication of research activities, no district shall initiate any research program except in cooperation with the government of this State or any of its agencies, or with the United States or any of its agencies. (1938, p. 735; Michie Code 1942, § 1289 (20); 1956, c.654).

§ 21-55. Demonstrational projects. They shall have power to conduct demonstrational projects within the district on lands owned or controlled by this State or any of its agencies; with the consent and cooperation of the agency administering and having jurisdiction thereof, and on any other lands within the district upon obtaining the consent of the owner and occupier of such lands or the necessary rights or interests in such lands, in order to demonstrate by example the means, methods, and measures by which soil and soil resources may be conserved, and soil erosion in the form of soil washing may be prevented and controlled, and works of improvement for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water may be carried out. (1938, p. 735; Michie Code 1942, § 1289 (20); 1956, c. 654).

§ 21-56. Preventive and control measures. They shall have power to carry out preventive and control measures and works of improvement for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water within the district including, but not limited to, engineering operations, methods of cultivation, the growing of vegetation, changes in use of land, and the measures listed in subsection (c) of § 21-2, on lands owned or controlled by this State or any of its agencies, with the consent and cooperation of the agency administering and having jurisdiction thereof, and on any other lands within the district upon obtaining the consent of the owner and occupier of such lands or the necessary rights or interests in such lands. (1938, p. 736, Michie Code 1942, § 1289 (20); 1956, c 654.)

§ 21-57. Financial aid to agencies and occupiers. They shall have power to cooperate, or enter into agreement with, and within the limits of appropriations duly made available to it by law, to furnish as a gift or loan or otherwise financial or other aid to any agency, governmental or otherwise, or any occupier of lands within the district, in the carrying on of erosion-control and prevention operations and works of improvement for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water within the district, subject to such conditions as the supervisors may deem necessary to advance the purposes of this chapter. (1938, p. 736; Michie Code 1942, § 1289 (20); 1956, c. 654.)

§ 21-58. Acquisition, improvement and disposition of property. They shall have power to obtain options upon and to acquire, by purchase, exchange, lease, gift, grant, bequest, devise, or otherwise, any property, real or personal, or rights or interests therein; to maintain, administer, and improve any properties acquired, to receive income from such properties and to expend such income in carrying out the purposes and provisions of this capter; and to sell, lease, or otherwise dispose of any of its property or interests therein in furtherance of the purposes and the provisions of this chapter. (1938, p. 736; Michie Code 1942, § 1289 (20).)

§ 21-59. Making material and equipment available. They shall have power to make available, on such terms as it shall prescribe; to land occupiers within the district, agricultural and engineering machinery and equipment, fertilizer, seeds and seedlings and such other material or equipment, as will assist such land occupiers to carry on operations upon their lands for the conservation of soil resources and for the prevention and control of soil erosion and for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water. (1938, p. 736; Michie Code 1942, § 1289 (20); 1956, c. 654.)

§ 21-60. Construction, improvement, operation and maintenance of structures. They shall have power to construct, improve, operate, and maintain such structures as may be necessary or convenient for the performance of any of the operations authorized in this chapter. (1938, p. 736; Michie Code 1942, § 1289 (20); 1956, c. 654)

§ 21-61. Development of programs and plans. They shall have power to develop comprehensive programs and plans for the conservation of soil resources and for the control and prevention of soil erosion and for flood prevention or agricultural phases of the conservation, development, utilization, and disposal of water within the district, which programs and plans shall specify in such detail as may be possible, the acts, procedures, performances, and avoidances which are necessary or desirable for the effectuation of such programs and plans, including the specification of engineering operations, methods of cultivation, the growing of vegetation, cropping programs, tillage practices, and changes in use of land; and, after such programs and plans have been approved by the Virginia Soil and Water Conservation Commission, to publish such programs and plans, and information, and bring them to the attention of occupiers of lands within the district. (1938, p. 736; Michie Code 1942, § 1289 (20); 1956, c. 654; 1964, c. 512)

§ 21-62. Acquisition and administration of projects; acting as agent for United States, etc.; acceptance of gifts. They shall have the power to acquire by purchase, lease, or other similar means, and to administer, any soil conservation, flood prevention, drainage, irrigation, agricultural water management, erosion control, or erosion prevention project, or combinations thereof, located within its boundaries undertaken by the United States or any of its agencies, or by this State or any of its agencies; to manage, as agent of the United States or any of its agencies, or of this State or any of its agencies, any soil conservation, flood prevention, drainage, irrigation, agricultural water management, erosion control or erosion prevention project, or combinations thereof, within its boundaries; to act as agent for the United States, or any of its agencies, or for this State or any of its agencies, in connection with the acquisition, construction, maintenance, operation, or administration of any soil conservation, flood prevention, drainage, irrigation, agricultural water management, erosion control, or erosion prevention project, or combinations thereof, within its boundaries; to accept donations, gifts, and contributions in money, services, materials, or otherwise, from the United States or any of its agencies, or from this State or any of its agencies or from any other source, and to use or expend such moneys, services, materials, or other contributions in carrying on its operations. (1938, p. 736; Michie Code 1942; § 1289 (20); 1956, c. 654.)

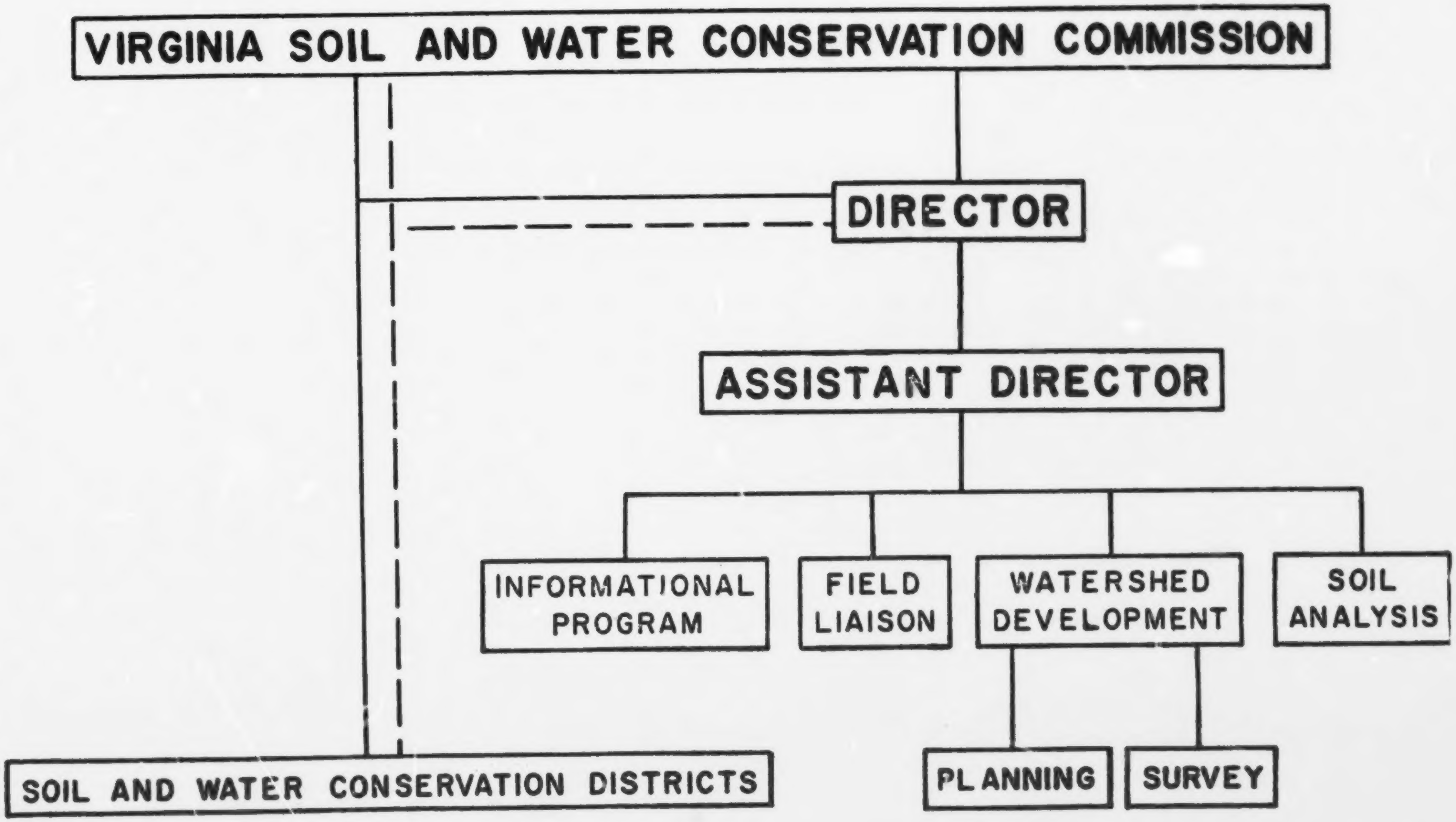
§ 21-63. Contracts; rules. They shall have power to have a seal, which seal shall be judicially noticed; to have perpetual succession unless terminated as hereinafter provided; to make and execute contracts and other instruments, necessary or convenient to the exercise of its power; to make, and from time to time amend and repeal, rules and regulations not inconsistent with this chapter, to carry into effect its purposes and powers. (1938 p. 737; Michie Code 1942, § 1289 (20).

§ 21-64. Conditions for extension of benefits. As a condition to the extending of any benefits under this chapter to, or the performance of work upon, any lands not owned or controlled by this State or any of its agencies, the supervisors may require contributions in money, services, materials, or otherwise to any operations conferring such benefits, and may require land occupiers to enter into and perform such agreements or covenants as to the permanent use of such lands as will tend to prevent or control erosion and prevent floodwaters and sediment damages thereon. (1938, p. 737; Michie Code 1942, § 1289 (20); 1956, c. 654.)

§ 21-65. Renting machinery and equipment. The district supervisors shall have authority to rent the machinery and other equipment made available to them by the Commission to the governing bodies of counties, cities, to individuals, or to groups of individuals to be used by them for the purpose of soil and water conservation upon such terms as the district supervisors deem proper. (1944, p. 347; Michie Suppl. 1946, § 1289 (20b); 1954, c. 670; 1964, c. 512.)

EXHIBIT NO. 6

ORGANIZATIONAL CHART OF COMMISSION — DISTRICT RELATIONSHIP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SOIL AND WATER CONSERVATION DISTRICTS

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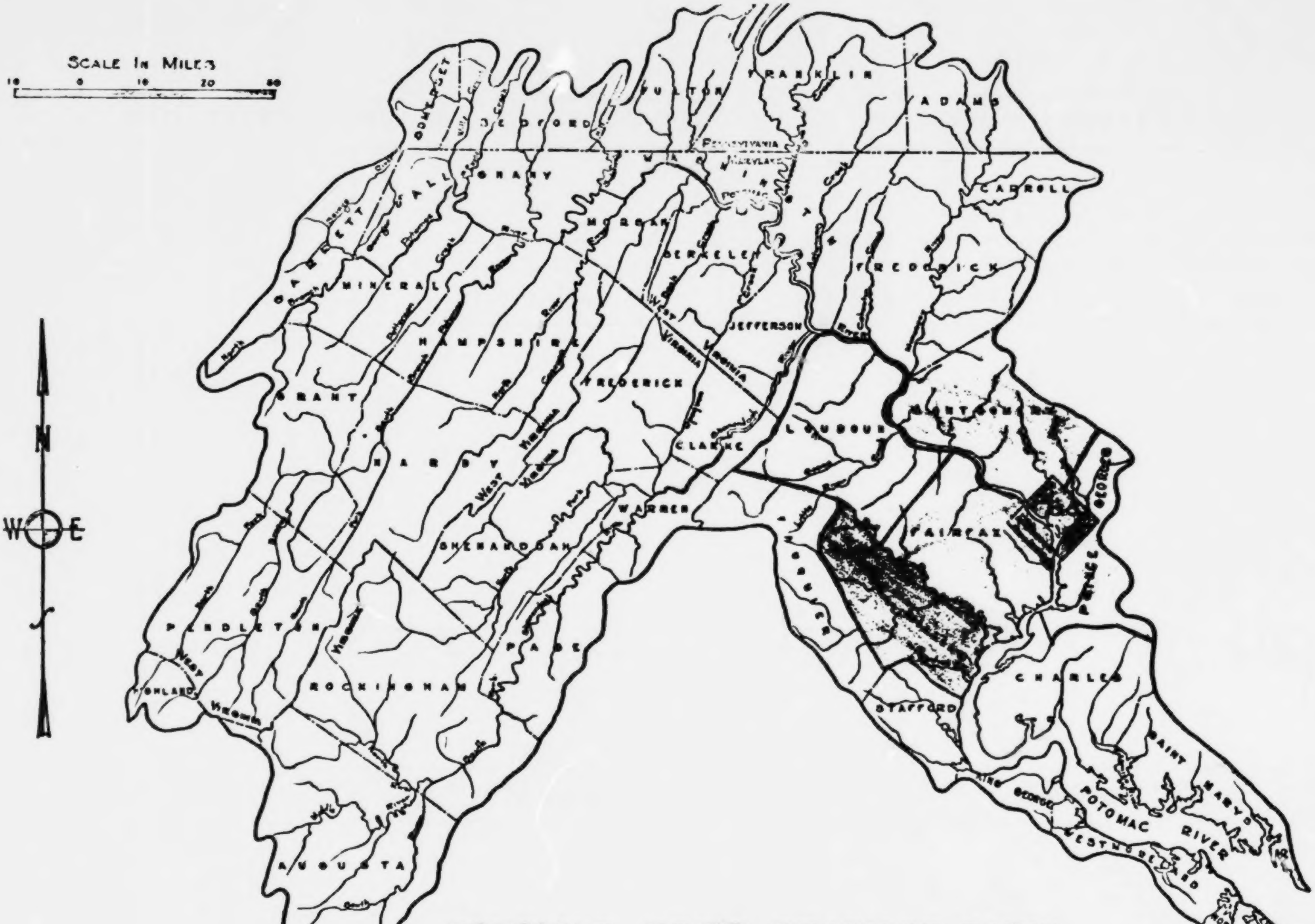
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SHENANDOAH
FAIRFAX
PRINCE GEORGES
PENDLETON
PAGE
HIGHLAND
ROCKINGHAM
CHARLES
STAFFORD
KING GEORGE
SAINT MARYS
POTOMAC RIVER
WESTMORELAND
NORTHUMBERLAND
AUGUSTA

POTOMAC RIVER DRAINAGE BASIN

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

MR. STEIN: Thank you, Mr. Blaisdell.

Are there any comments or questions?

MR. JACKSON: Mr. Chairman?

MR. STEIN: Yes.

MR. JACKSON: May I ask a question of Mr. Blaisdell with reference to his report from the Subcommittee on Surveillance of Wastewater Treatment Plant Operators?

MR. STEIN: Surely.

MR. JACKSON: I believe in Phase I of that report there is mentioned that the subcommittee plans to evaluate job specifications of plant supervisory personnel.

I can't question your plant to evaluate this. Do you plan to recommend the type of specification and then evaluate against that, or could you enlighten us a little bit about that?

MR. BLAISDELL: No. I think the idea is to evaluate from a standpoint as to whether or not the ratio of professionals to subprofessional people within the activity is proper, more than the exact detail specifications of the job.

MR. JACKSON: I see. Thank you, Mr. Chairman.

MR. STEIN: Well, maybe this activity also is related to the fairly good results we have found on water quality in the river, because whenever you have a surveillance program and look into operations, there seems to be a correlation between that and with improved operations and improved water quality, and maybe this had some effect.

Let me ask you two questions. Perhaps the last one is a comment.

How much extra money is going to be needed to do this, and extra personnel?

MR. BLAISDELL: Are you talking, Murray, from the standpoint of stream monitoring?

MR. STEIN: The whole program.

MR. BLAISDELL: The whole program?

MR. STEIN: In other words, it seems to me that here is what happened. This is a wonderful thing that you have gotten together. But, as Mr. Jackson points out, whenever you begin to talk about reviewing job descriptions, you may be running into the State and Federal civil service. Whenever you talk about who is to do something or you have made decisions, or the subcommittee has made determinations, or organizational arrangements, which may very well be intelligent and valid, this raises all kinds of questions before you can put them into operation.

It also seems to me that if we are going to undertake a program like this, we may be involved with expenditures on the State, Federal and District level beyond what we have now and the commitment of personnel beyond what we have now.

Can you give us an indication of what this might take if we were going to recommend this?

MR. BLAISDELL: I believe none of the subcommittees at this time are in a position where they could give an accurate estimate of what any one or all of these programs is going to cost.

This is something that they intend to come up with eventually when they reach a final report.

However, there is an indication in stream monitoring alone. For instance, we have mentioned 90 stations that are being sampled at the present time, and the estimate is that there is somewhere between $300,000 and $500,000 a year invested just in this program alone.

Once the program is evaluated, it may be that less stations would be required, it might be that more stations would be required, but if we are talking just in the conference area, we also have to give some consideration to what may be required in the upper basin, and you can see that the figures may rise to a considerable amount.

MR. STEIN: Yes.

What I am getting at is, given this kind of program, it just seems to me that, of course, we need this. I think the committee has done very commendable work and laid out a blueprint, but before determinations are going to be made of the magnitude of the program that they are contemplating with the implications to the program, and under the kind of society we have, it is not likely that that is going to be done in a subcommittee or at a technical level. I think we have to find some device for kicking it upstairs.

One of the points here was that the Committee on Sedimentation should meet every two months. I guess most of us in this field, in this general area, have been getting reports from sedimentation committees from time immemorial, and I don't find that they generally have the meat that this report has. Once they begin meeting every two months, it is just a report of another meeting.

I am just putting this out to you: If this program has a measure of validity -- and, in listening to you, I think it has and it is a vital one -- it would seem to me that the avenue for getting this moving is to move this up the political ladder where it gets some visibility; because the notion that you can run something like this, or get the support or personnel or funds to do this at a tactical level may be remote.

I know the people who have worked on this thing think this is their baby and you don't want to let this go, because once it does, it is going to get modified; but this is what happens to all of us.

You know, when we first drafted the Water Pollution

Control Act -- and I had a hand at drafting it -- I never figured that any version I have seen enacted since is as good as my original draft, and I am sure we all have that feeling, except that my original draft would never have gotten anywhere and it wouldn't be in the law.

I think we have to really take the plunge if we feel that this is an important program and move it up where it can get the political scrutiny and take the buffer of the political world, so that we can get it going, because I am certain that we can't operate a program of this magnitude with all the decisions being made on a technical level.

MR. BLAISDELL: I would agree with you on this.

MR. JOHNSON: Mr. Chairman?

MR. STEIN: Yes.

MR. JOHNSON: In connection with your reports on surveillance of waste treatment plant operations, one of the problems that we have had in this area for a number of years, not peculiar to this area, is plants getting up close to capacity, or maybe over capacity, and we don't seem to find this out until it has happened.

It would appear to me that in this type of a surveillance program, the relationship of the plant operation to its capacity ought to have a rather prominent place in the report that would be made.

MR. BLAISDELL: This is one of the things they are looking at, and will continue to, in connection with the inventory.

MR. STEIN: Are there any other comments or questions?

Mr. Paessler?

MR. PAESSLER: Mr. Chairman, with reference to the evaluation of the plant personnel, perhaps I have misinterpreted this, but it seems to me that the objective here was simply not really so much to make an evaluation, but to obtain the facts as they relate to the types of personnel and their competence or qualifications, or was it actually to do this plus make an evaluation and get some standards?

MR. BLAISDELL: Well, we felt that to do the job as we should do it, we should be able to make specific recommendations to the conferees for their decision, and so this would follow, I think, that we would have to make some appraisal of personnel, staffing and plans, as to their capabilities and what not, whether we thought they had it.

MR. PAESSLER: In other words, an interpretation of the facts?

MR. BLAISDELL: Right.

MR. STEIN: Again, I am not sure here we are not getting on very ticklish and dangerous ground, and I would just like to put up a red flag here on this.

When we deal with an industry, for example, as a regulatory agency and we are interested in an effluent, we really don't care how they get it as long as they produce it.

When I buy an automobile, I don't go into Ford or General Motors and evaluate their personnel as long as they are putting out a good product.

By the same token, if we are working this through the conferees and the regulatory province, I think just good sense mandates a very carefully circumscribed area where we are going to get into personnel evaluations in individual plants. I think there possibly are other mechanisms to do that.

I think the response on this area that you have gotten from the various conferees should be given serious thought by the committee, because that is a thicket that I would not like to plunge into without looking at it very, very carefully before we make the move.

Are there any other comments or questions?

MR. HOPE: Mr. Chairman, if I may?

MR. STEIN: Yes.

MR. HOPE: I detect a little note in the remarks that you have made that you don't feel that the evaluation of the capabilities of the individuals who are running these plants is appropriate. I think it is.

Look at the way we run this country with relation to barbers, beauticians, physicians. I think that people can be taught to remove appendices probably as well as a Board-certified surgeon, but at the same time you would not want him to be working on you.

It would seem to me that this is a very reasonable suggestion that the subcommittee is making, and I think that in the event that we should find that the people who are charged with running these rather complex facilities that are being built to do a given job, should be looked at critically.

If we do not have the kind of people running the plants that should be there, then the attention of the appropriate authorities should be called to this.

I think it will work out to the benefit not only of the individuals concerned, but from the standpoint of taking a step forward in further controlling the pollution problems of the Potomac.

MR. STEIN: All right.

MR. BINGLEY: Mr. Chairman, may I make a comment?

MR. STEIN: Yes.

MR. BINGLEY: I was somewhat surprised to see in there, Mr. Blaisdell, no mention about the program of certified water and sewage plant operators in Maryland.

We have a law whereby beginning next year the superintendents of all water, sewage treatment and industrial waste treatment plants, must be certified by a board appointed by the Governor.

I concur with Mr. Hope's statement that it is of great importance that we, the regulatory agencies, have some assurance at least that the superintendent, the man responsible, shall be competent, and that is the purpose of our law and present action, sir.

MR. STEIN: I understand that.

Let me clarify the point. I don't believe there is any question that this is the functioning of, say, the District of Columbia, Virginia or Maryland. What I question is, in dealing with a Federal-State regulatory operation where we just ask the State to produce certain results from its program, that as a Federal-State regulatory operation we don't get into the evaluation of your personnel.

For example, it is essential to the Maryland program that you or Mr. Coulter evaluate the personnel, or Mr. McKee, wherever you are.

As I say, I am just raising this as a flag -- whether you want people from the District, Virginia and the Federal Government joining with you in that evaluation, at least, at this stage.

MR. BINGLEY: May I say that we don't?

MR. STEIN: That's what I thought. I just raised it. That was the sole point I was making.

Are there any other comments on this?

(No response.)

MR. STEIN: If not, the next item on the agenda is "Watercraft Pollution Regulations."

RECOMMENDATION NO. 13

WATERCRAFT POLLUTION REGULATIONS

MR. STEIN: May we hear from the District of Columbia on watercraft pollution regulations?

MR. HOPE: Mr. Chairman, Recommendation No. 13 of the conference dealt with the matter of watercraft pollution regulations.

When the Department of Public Health of the District of Columbia submitted its proposal for a regulation to provide for the control of sedimentation, it also included a draft regulation designed to control pollution from watercraft. The watercraft pollution provisions went through the same process as the sedimentation provisions -- up to the public hearing phase. At the same public hearing, the watercraft regulation received some adverse criticism. As a result, the Council declined to pass the regulation pending further study.

I might say, parenthetically, that we had a rather interesting public hearing on this particular regulation. We were assured by one of the major lines operating out of the District of Columbia that really it was not a problem that we should worry about in the District, because most of the toilet flushing took place after the watercraft had moved into the adjoining States of Maryland and Virginia. (Laughter.) This gives me little comfort and surcease from the problem.

MR. STEIN: They would have to hug that Virginia shore pretty close.

MR. HOPE: That's right. (Laughter.)

On October 7th of this year, a revised regulation passed on first reading. Subsequently, the regulation was further revised and given another "first" reading on November 4th. The Council approved this reading and directed that a second (and final) reading be scheduled. We anticipate approval of a watercraft regulation by January 1, 1970.

Briefly, the regulation will prohibit solid and liquid waste discharges from berthed watercraft and will require marinas to provide adequate sanitary facilities for the use of their patrons.

I wonder if I might, at this point in time, Mr. Chairman, touch lightly on another subject that is not particularly germane to the particular point that we are discussing, but I'm afraid if I lose the privilege of the podium, I might not be invited back. And you did indicate earlier, yesterday, as I recall, your interest in simple, direct, declarative sentences, and I have a few that I would like to try on you, if I may.

MR. STEIN: All right.

Before you do this -- and this looks like a blockbuster, Malcolm -- let me get clarification on what you have said thus far.

Do I understand that in the watercraft you are essentially going for the holding tank and discharge into the marina operation?

MR. HOPE: The regulations themselves are not quite that specific.

There was some confusion during the course of the public hearings by virtue of the fact that apparently the matter of facilities aboard watercraft is being preempted by the Federal establishment, as you know, under -- what is it -- S. 7?

MR. STEIN: If the law passes.

MR. HOPE: And our District Council was a little bit disturbed about the possibility of establishing certain types of requirements that might be in conflict with those which would subsequently emanate from the Federal establishment, so that our primary area of concern is to prevent the pollution in those anchorages where we have fairly substantial numbers of watercraft, some that remain there for a considerable period of time.

MR. STEIN: Right; and there will be no discharge within those areas?

MR. HOPE: That's right.

MR. STEIN: I understand. Thank you

MR. HOPE: In concluding my remarks, I wish to comment on a matter which is not an integral part of this conference, but which may have an impact on the success of our efforts. I refer to what appears to be a problem of communications, specifically, the Department of the Interior news release dated October 8, 1969, captioned: "Pollution Control Program Would Create Urban Recreation Lakes." The news release describes a proposed project for the development of swimming areas in Kingman Lake, an arm of the Anacostia River.

It is not my purpose (nor is it possible) at this time to comment on the merits of the proposal. However, I offer the following quotation from the release to point up the problem: "Discussions have been held with officials of the District of Columbia, Army Corps of Engineers, and Federal Highway Administration in view of their possible involvement in the proposed program."

I have been unable to identify any official in the

M. Hope

Department of Public Health or the Department of Sanitary Engineering with whom this proposal was discussed. About two years ago, we were asked (by the then Engineer Commissioner) to comment on the feasibility of making Kingman Lake fit for swimming. We submitted our comments and heard nothing about it until the news release was received. At that time, 1967, specific pollution abatement proposals were not offered by the Federal establishment.

A similar incident occurred when the Rock Creek report ("The Creek and the City") was issued a few years ago. The report contained certain recommendations relative to wading in Rock Creek which were made without prior consultation with the Department of Public Health. The proposal for chlorinating the creek was never implemented and, frankly, borders on the impactical.

Officially, the Department of Public Health is the District's water pollution control agency. Although there is continual emphasis on the need for coordination of effort and cooperation among the local governments, this spirit seems to disappear when the Department of the Interior moves unilaterally in the issuance of news releases. We would hope to hear of your plans prior to reading about them in the news media.

Let me say, frankly, that it is sometimes disturbing--and I have a boss or bosses--to have them raise some question regarding something that has appeared in the newspaper on which I have had no prior information, and have to plead ignorance.

We in the District of Columbia expect and anticipate a certain amount of usurpation of responsibility by Federal agencies. However, if there is to be real progress in pollution abatement, the local officials must be consulted before plans and public statements are made. If this is done, we can progress just as rapidly and do so in a truly cooperative atmosphere.

Let me temper this blunt statement somewhat by saying that we have had a very fine relationship with your Regional Office in Charlottesville. They have made every effort to keep us informed on matters of public information, but apparently there seems to be a little lack of communication as it relates to the hierarchy that we have in Washington and apparently their preoccupation with obtaining visibility in handling all of the problems that we have in the District of Columbia, without contacting the appropriate officials at the District level.

Thank you very much.

MR. STEIN: Thank you, Mr. Hope.

Are there any comments or questions?

MR. JENSEN: Mr. Chairman, Mr. Hope was once my boss, so I have learned to recognize his very polite language as saying he doesn't like us one least little bit. (Laughter.)

I trust that it won't happen again.

I wish I could give him a satisfactory answer to the question that he asked. The news release in question, however, was one of the Secretary of the Interior, and I have no idea, really, whom this was discussed with in the District of Columbia. I shall try to find out, if you wish.

MR. STEIN: Any other comments or questions?

MR. JACKSON: Mr. Chairman, if I may?

MR. STEIN: Yes.

MR. JACKSON: I believe Mr. Hope has indicated the true state of this particular incident.

I would like to say that we are now in communication, and I wanted Mr. Hope to be here so that I could tell him this. As of last week, we received communication from another section, Mr. Rosenkrantz, asking us about looking into the various aspects of this particular plan as it affects the District of Columbia sewerage system; so we are in touch with him now and we will begin, I believe, some cooperative effort, and some chlorination in this particular program.

MR. STEIN: We have a request from Mr. Coulter. Let's defer the Maryland and Virginia watercraft regulations remarks, while some of the people are here, to hear this.

We will call on Mr. James Coulter to talk about the

Piscataway situation.

Mr. Coulter.

STATEMENT OF
MR. JAMES COULTER
DEPARTMENT OF HEALTH
STATE OF MARYLAND

MR. COULTER: Mr. Chairman, Conferees:

I thank you for your courtesy in interrupting your schedule.

A few moments ago, I declined the opportunity to rebut to Mr. Holmes, because, in my opinion, no rebuttal was required.

I respect and will strongly support the right of any citizen to question the public motives of a public official, and to push that request with the Grand Jury or with the appropriate officials of the State, as he may see fit.

I do think that the record should be straight as to the intentions of the Maryland State regulatory authority, and the Maryland State policy-making group with respect to the Piscataway Sewage Treatment Plant, and, for that matter, all sewage purification works in the State of Maryland.

Mr. Chairman, I did appear before a subcommittee of the conference called to look into the matter of the Piscataway Sewage Treatment Plant, and on direct questioning at that subcommittee I did state that in many respects the effluent being delivered from the Washington Suburban Sanitary Commission's sewage treatment plant at Piscataway was an asset, in terms of quality, to the waters of the Bay. I went on to enumerate the bacterial counts, the excess of dissolved oxygen over oxygen demand, and a number of other characteristics that made that water, as it is now being delivered from the plant, an asset to the Bay.

Mr. Chairman, in order to complete the record, I would request that the pertinent part of the transcript of that hearing be included here. I am sorry that I do not have it with me.

MR. STEIN: Without objection, that will be entered in the record as if read.*

MR. COULTER: I would like to point out to the conferees and those here that the action at Piscataway is not isolated, that at the policy level and at the regulatory level in the State of Maryland, we believe that the hope for the protection of our natural resources, and especially the water quality of our resources, depends on our ability to collect wastewater and cleanse and purify that wastewater, so that it becomes an actual asset to the quality of all the water systems of the State.

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* See end of transcript.

In face of the growing population, in face of the rising standard of living, in face of the advances in technology, and in face of the fact that there are many urban runoff, rural runoff sources of waste that cannot be collected and purified, at least with existing technology, to offset those pollutional characteristics it is very important that we be able to collect our wastewater and purify that wastewater to the point where we can actually control the water quality of any system, and it is to that end that we are moving in the State.

In our policy discussions, we have rejected the concept of a water quality standard as a limit to polluting. We are saying that water quality standards should be established as minimum permissible standards, and we are saying to the Washington Suburban Sanitary Commission that even though the results of this conference show that you might be entitled to some portion of 86,000 or 100,000 pounds of BOD in the Potomac River, the State regulatory agencies will require you to reduce the level of organic material and all other substances to the lowest point that practical technology will permit.

Now, there has been some discussion, and I have been informed that the Federal Government has rejected an application for an alternate method of discharge of sewage at the Piscataway Sewage Treatment Plant. This alternate method was proposed because the Secretary of Health in his judgment believes that a serious public health hazard exists, and will grow worse unless adequate means are taken to collect and purify the waste that is being generated in the Piscataway Basin.

The alternatives are to transmit that waste to a sewage treatment plant at Blue Plains, which the record shows from these discussions is at the present time overloaded, or to take that waste to a regional cleansing plant at Piscataway and there clean it to the level that we can design into that plant and purify the wastes.

The regulatory agencies would not have agreed to this proposal if it violated the water quality standards. Furthermore, the regulatory agencies would not agree to that proposal unless they were convinced that Washington Suburban Sanitary Commission was complying with their every request to apply the best possible waste treatment technology.

We believe strongly in this conference procedure. We believe that Maryland must abide by the recommendations that have been made. We also know that we must proceed as technology permits us to proceed.

With respect to the Piscataway Sewage Treatment Plant, in discussions amongst the responsible agencies, a schedule has been laid out, which depending on the development in demonstration processes and research now going on, will go to one concept of the highest level of purification that we can get which will certainly meet the requirements of this conference by 1975.

There are some orderly steps that can be taken to abate the health hazard and move in that direction right now. This orderly construction schedule has been agreed to by the owner of the plant and the State authorities.

The schedule calls for immediate expansion of the capacity of the plant to handle approximately 15 million gallons per day with a very high level of purification and nitrification. The schedule calls concurrently for the construction of a demonstration sewage treatment plant of 5 million gallons capacity, where, working with the Federal agencies, we will test the effectiveness, the cost characteristics and the operational dependability of the very latest method of purifying sewage.

As that demonstration is carried forward, the regulatory agencies have agreed that they will require Washington Suburban to put the facilities into full-scale design and operation as rapidly as possible, with a deadline of no later than 1975.

In addition to that, to provide further protection to Piscataway Bay and with this objective of enhancing the quality of Piscataway Bay, Washington Suburban is required, in its initial construction, to go to an oxidation pond or a terminal pond, or what in other parts of the country would be called the tertiary treatment.

Now, some people who seem to misunderstand the biological processes that go on within wastewater purification work have simply said that this is a little short-term retention pond at the end of a sewage treatment plant. Recall that our objective is to remove not only the bacteria, not only the organic material, but as much of the phosphorus and nitrogen as we possibly can.

In the plant as designed at Piscataway, and in the plant that is proposed at Piscataway, sewage is nitrified; that is, that the organic material in the form of nitrogen is completely oxidized to nitrates.

It is a well-known fact in the denitrification cycle that that nitrate under biological activity, bacterial activity, can be diverted to nitrogen gas, and, in fact, one of the things that plagues conventional plants is that the final settling tank, if built too large, will result in this gasification and a floating sludge instead of a settling sludge.

I see no reason to believe that with a high degree of nitrification which will be obtained with good operation at Piscataway, why a significant portion of the nitrogen will not be nitrified in the oxidation pond and come off as nitrogen gas.

At the same time, we believe that there are things within the operation of presently available conventional sewage treatment plants that can be changed to enhance the removal of phosphorus.

By accident, at the Back River Sewage Treatment Plant, we are now removing in the activated sludge portion of that plant in the neighborhood of 90 percent of the phosphorus.

We hope that as these demonstration programs go forward, that at Piscataway we can see if we can reproduce what is happening by accident at the Back River Sewage Treatment Plant.

But the point is that the objective of the State of Maryland is to build a regional works at Piscataway to serve the citizens in that basin to relieve much of the sewage that otherwise would go into the regional plant to the Blue Plains Sewage Treatment Plant; and at Piscataway as rapidly as we know how to do it to build into that plant the purification works that will produce an effluent that will continue to be an asset to Piscataway Bay.

Thank you.

MR. STEIN: Thank you, Mr. Coulter.

Are there any comments or questions?

MR. BINGLEY: Mr. Coulter, Mr. Holmes has given me a note that he would like to read a letter you wrote to WSSC of February 18th into the record. I see no objection to it. It is a matter of public record in our files.

MR. STEIN: All right. Let's wait just a moment. Do you want to read this now, or shall we wait? Mr. Coulter is up for any more comments or questions.

You know, I have both really a comment and a plea on this.

As you probably have guessed, water pollution control or the people who work in this are kind of an inbred operation. Maybe that's good; maybe that's bad. Most of these men up here years ago started working, as Mr. Hope alluded to, on septic tanks and privies, and now we are up to the so-called tertiary treatment.

But, in dealing with the people that we have here, and intimating that they are not as interested in getting pollution control as anyone else is and that you have to engage head-on, I don't think moves the program forward.

I can pick at least two people her in Malcolm Hope and Al Paessler with whom I have had differences for the major part of their professional careers, and they have had with me. Mr. Coulter is somewhat younger, but ever since he came into the organization I have had differences with him. They were really fundamental differences.

With Mr. Paessler, through the years from the 1940's up to now, if you take the position of State and Federal rights vis-à-vis Virginia and the Federal Government in the development of the legislation, you can just get a broad outline of the picture of what I mean and where we stood on different sides of the fence and how acrimonious that battle has been.

But, never once did I have the notion that these people were not proceeding in good faith, that they weren't moving for water pollution control, that they were moving in a way that was violating the law, that was fraudulent, that was in a manner which was not consistent with their position in office.

I do think, too, that over the years, possibly both sides on the various questions have modified their positions. Maybe this is just a function of age, that we have gotten older, but I have learned a lot from their points of view and I hope they have learned possibly something from my point of view.

The notion that I do have is, when we get into the battle with people who want to clean up water -- and I am not talking about the opponents of water pollution control -- that we are setting back the cause of water pollution control. Goodness knows, there is so much to be done in this job that we can't let States' rights, Federal rights, or local rights get into the picture.

Unless we all--Federal, State, localities, industries, and citizens' groups -- do our part on this job, this problem is so big that it is going to engulf us.

With the critical water problems facing us throughout the country, particularly since we are on the verge of putting an active program in effect in the Potomac River, I am not sure in the future that we can afford the luxury of waging verbal or legal war with each other. The more we do, the longer it is going to take us to solve the problems.

Are there any other comments?

(No response.)

(The documents to be submitted by Mr. Coulter are appended at the end of the transcript.)

MR. STEIN: Mr. Holmes, do you want to come up with your letter, and you can comment on that too, if you wish.

MR. HOLMES: So that this conference will understand, as far as consistency, we have had from our local State officials in this sincere attempt to clean up pollution, and I do not wish to suggest that our officials in violating the law in many instances, which they have, are not sincere, I will let the jury and the courts speak to that point.

I would like to read into the record a letter written by Mr. Thomas W. Shives, who serves under Mr. Coulter, and I checked with him on February 19, 1969 -- the letter is dated

February 18, and this went out apparently with Mr. Coulter's approval -- at least, he told me so the next day.

This is addressed to Mr. Robert J. McLeod, Chief Engineer, Washington Suburban Sanitary Commission, Hyattsville, Maryland, concerning the Piscataway Waste Treatment Plant.

"Dear Mr. McLeod:

"After a discussion with Messrs. Ritter and Deakyne of Whitman, Requardt and Associeates and review of the material and information which they have gathered since August 1968, we have decided that flows up to 8.0 mgd can be treated at the Piscataway waste treatment facility without violating the Maryland Water Quality Standards. This is predicated upon continued close surveillance of the operation so that optimum results can be obtained at all times.

"However, this authority will not be official until such time as we have received from you a statement to the effect that the maximum capacity of the Bock Road pumping station will be utilized at all times and that every effort will be made to immediately increase the capacity of this station to 5.0 mgd. It should be further understood that plant flows should be maintained at 5.0 mgd until you have submitted an application for Federal and State financial assistance for the expansion "of the plant in accordance with your 5-Year Plan, and have submitted a schedule for the completion of plans for the actual construction.

"As soon as we have received the assurances which we have outlined, authority to increase flows to the Piscataway plant will be granted.

"Very truly yours,

/s/ Thomas W. Shives

Thomas W. Shives, P. E.

Chief, Division of Water and Sewerage"

With a copy to Daniel L. Finucane, who is now under indictment for violating the laws of the State of Maryland.

I would just like to point out that this is the sort of concern for pollution that we have in Prince George's County from our Maryland officials, who give authorization to allow a plant which has not been meeting the water quality standards at its 5 million gallon design capacity to increase its operation to 8 million gallons a day.

Thank you.

MR. STEIN: Are there any comments on that?

MR. BINGLEY: I see no basis for any comment whatsoever. No, sir.

Mr. Coulter, I think, may have one there.

MR. COULTER: I don't have a copy of the letter in front of me. I presume that Mr. Holmes can read.

(Mr. Holmes thereupon handed same to Mr. Coulter.)

MR. COULTER: The concepts in the letter certainly are sound.

A study was made at a time when the capacity was badly needed at the Piscataway Sewage Treatment Plant, and it was concluded this plant could operate at 8 million gallons a day and turn out a very highly purified effluent and meet the Water Quality Standards of the State. That decision was made, the plant has been operating, and the record is clear.

The results are reviewed by the Maryland State Health Department, and we see no reason to cut back from the 8 million gallons per day that the plant is permitted to operate at.

There may be those here, if the conferees would like further clarification on the present quality of the effluent from the Piscataway plant operating under the final result of this series of correspondence, to clarify the issue as to whether the plant is or is not operating well at this level.

MR. STEIN: Are there any other comments or questions?

(No response.)

MR. STEIN: If not, I would like to do this, Mr.

Holmes, just for the sake of preserving the record. This may be my professional hangup, but I have an obligation.

Several times you have referred to someone who is under indictment. I think it is fairly clear that an indictment is not a conviction; that under our system of law everyone is presumed to be innocent until proven guilty.

Thank you.

If there are no further comments on this, let us go on to the watercraft regulations.

May we hear from Maryland?

MR. BINGLEY: Mr. Chairman, I am a little frightful in getting up here representing Maryland. I hope none of you folks will object too seriously about what we say about watercraft regulations.

The recommendations of May 8 stated that the States should develop regulations for watercraft pollution control unless enactment of Federal laws made such regulations unnecessary. The Senate and House of Representatives have passed legislation, S. 7 and H. R. 4148, respectively, modifying the Federal Water Pollution Control Act to include a section on the control of watercraft pollution. It is our understanding that the two bills are essentially in agreement on this subject, and that they are now being reviewed by a joint committee. This proposed legislation would authorize the Federal Government to promulgate regulations to prevent the discharge of untreated or inadequately treated sewage from watercraft. Such regulations would become effective for new vessels two years after promulgation, but not earlier than December 31, 1971, and for existing vessels five years after promulgation.

In view of the probability that Federal legislation will be enacted in the current Congress, State action would at this time be premature. Should any substantial delay in the enactment of Federal legislation occur, the State Department of Health will reexamine the situation leading to the possibility of having legislation enacted in the State for the control of this pollution problem. We do have a report and very preliminary regulations prepared by members of our staff.

We do have a report prepared by members of our staff and very preliminary regulations prepared in the event that the Federal regulation does not proceed.

One of the problems involved in watercraft regulations is a unilateral action by a given State. If we do anything in Maryland and somebody from Virginia comes into Maryland waters with their boat, they are in violation of our law.

Therefore, frankly, we are convinced that a uniform law for the 50 States, or at least the 48 States on this continent, is essential.

MR. STEIN: Thank you, Mr. Bingley.

Are there any comments or questions?

(No response.)

MR. STEIN: I have one comment.

I want to emphasize the importance of your last point. We have one of these cases going in the Minneapolis-St. Paul area. They both have different boating regulations, and this is a never-ending source of irritation. It is something we can't solve, and it comes up at every meeting. A fellow from Minnesota takes a boat and gets out on the Mississippi River and moves across to Wisconsin where he is slapped with a ticket and a $50 fine.

Again, this is the kind of irritant this produces. It has gotten to really big proportions there, and I am not sure that either State can live with this too long.

Let me ask you this for clarification: As I understand it, a macerator-chlorinator device might be acceptable under those proposed Maryland regulations. Isn't that so?

MR. BINGLEY: Mr. Chairman, the proposed regulations are a committee report only. Frankly, I think that if I make a comment on this, somebody is going to say that Maryland is going to do thus-and-so; and since these are only in report form, I don't think comments should be given at this stage of the game.

MR. STEIN: I would just like to make one comment here.

Since Maryland has committed herself to the conference recommendations with a high degree of phosphate removal and nutrient removal at the last session of the conference, and the other States in other areas of the country that have done the same have believed that they have found nothing other than a holding tank which would provide commensurate pollution control from a boat, I would like to try to keep that as factual as possible.

MR. BINGLEY: I would only say, Mr. Chairman, that it surely seems impossible to me to require phosphorus and nitrogen removal on a boat.

MR. STEIN: But you can require holding.

MR. BINGLEY: Oh, yes. I mean, complete treatment on a boat.

MR. STEIN: No, no. The only alternative that States have found that have had this high nutrient removal as part of their program is reasonable, compatible boating regulations. In other parts of the country this generally results in a holding tank recommendation.

MR. BINGLEY: And I am sure that you are as aware as we are that some States have agreed to macerator-chlorinating devices, and have found difficulties in those devices.

I personally think a holding tank is the only answer, but this is not our official position.

MR. STEIN: All right. Thank you very much, sir.

May we hear from Virginia on this?

MR. PAESSLER: Mr. Chairman, the 1968 session of the Virginia General Assembly amended the State Water Control Law to include Section 62.1 - 44.1, which empowers and directs the State Water Control Board to adopt and promulgate all necessary rules and regulations for the purpose of controlling the discharge of sewage and other wastes from both documented and undocumented boats and vessels on all navigable and nonnavigable waters within the State.

At the present time, the staff has been reviewing reference material and discussing existing and proposed regulations with representatives of other States, and we have included Maryland and North Carolina on this, the two border States, and also with other agencies within the State. We expect that the staff will have completed, by January 1970, a draft of rules and regulations for consideration by the Board. Should the Board deem these proposed rules and regulations satisfactory, a public hearing will be convened, following which the Board will adopt and promulgate rules and regulations based upon testimony received at the hearing.

I would like to make the further comment that, as was stated here previously, the principal thrust which these regulations I think will have, unless Federal regulations come out in the meantime, is the prevention of undesirable water quality conditions in coves, harbors, anchorages, marinas and other confined spaces.

The question of discharges on open waters, or under other circumstances, is one that we do not consider too serious at the moment. The regulations will probably cover it, but, as was the case Mr. Hope mentioned with the District of Columbia, their thrust seems to be along this same line, and what these final contents of our regulations will be, we will have to wait to see what further consultations with other State agencies and in the staff will produce.

MR. STEIN: Thank you, Mr. Paessler.

Are there any comments or questions?

(No response.)

MR. STEIN: If not, thank you very much for your statement.

May we hear on the public meeting of the upper basin from the Interstate Commission?

Mr. Johnson.

RECOMMENDATION NO. 14

ANNOUNCEMENT OF PUBLIC MEETING ON UPPER BASIN

MR. JOHNSON: Mr. Chairman, before I get into Recommendation 14, yesterday, under, I believe, Recommendation

8, the Interstate Commission was asked to comment on sedimentation, and I made the statement that we provided a chairman to the Subcommittee on Sediment Control under Recommendation 12, and that our report would be made this morning. That report was made by the representative of FWPCA as one of the three subcommittee reports.

Recommendation 14 calls for the Interstate Commission to arrange a meeting to consider water quality problems in the Potomac Basin outside of the Washington area, with particular emphasis on bacteria, nutrients, pesticides and sediments.

The Commission decided that due to differences that exist in the nontidal areas of the basin above Washington, as opposed to the lower estuary, it would be wise to schedule two separate meetings: the Upper Potomac meeting at Cacapon State Park, West Virginia, next week, November 12-14, 1969, and the lower estuary meeting during the spring of 1970. The exact dates for that meeting have not been set as yet, but it will probably be in late April or early May.

A copy of the public notice for the November meeting is attached to this statement.

Thank you.

MR. STEIN: Thank you, Mr. Johnson.

Does anyone now feel they want to say anything before the conferees recess for an executive session? This will

NOTICE OF PUBLIC MEETING

INTERSTATE COMMISSION ON THE POTOMAC RIVER BASIN

Annual Fall Meeting

Cacapon State Park, West Virginia

November 12-13-14, 1969

The Annual Fall Public Meeting of the ICPRB will be held this year on November 12-13-14, at Cacapon State Park, near Berkeley Springs, West Virginia.

The meeting will consist of a conference on the non-tidal reaches of the Potomac River and tributaries above Washington to consider water quality programs and problems with particular emphasis on bacteria, sediment, nutrients, pesticides and acid mine drainage.

PROGRAM

November 12	8:00 AM	Registration — $3.00
	10:00	Opening Remarks, ICPRB Chairman
	10:15	Statements from Members of Congress. Members of State Legislatures, Federal Agencies and other officials
	11:30	Water Quality Assessment — FWPCA
	12:30	Luncheon
	1:30	Reports of States Maryland Pennsylvania Virginia West Virginia
November 13	9:00 AM	Reports of States (continued)
	12:00	Luncheon
	1:00	Problems of Land Drainage Bacteria Nutrients Pesticides
	6:15	Social Hour
	7:00	Banquet
November 14	9:00 AM	Problems of Land Drainage (continued) Acid Mine Drainage Sediment
	12:00 Noon	Adjournment

Municipal, county and state officials, private citizens and associations wishing to present statements should arrange for this with the Water Pollution Control Agency of their State or with the Interstate Commission.

Arrangements for overnight accommodations should be made with Cacapon State Park, Berkeley Springs, West Virginia. Since lodge and cabin facilities are limited we are enclosing a listing of motels and hotels within the area.

If you plan to attend, please fill out and return the coupon below to the Interstate Commission.

Interstate Commission on the
Potomac River Basin
1025 Vermont Avenue, N.W.
Washington, D. C. 20005

I plan to attend the Conference. I plan to attend the following functions.

November 12 —	Luncheon $3.00	Yes ☐	No ☐
November 13 —	Luncheon $3.00	Yes ☐	No ☐
November 14 —	Social Hour $1.50	Yes ☐	No ☐
	Banquet $5.00	Yes ☐	No ☐

be the last opportunity for anyone to present any material to the conferees.

(No response.)

MR. STEIN: If not, I would like to thank you all for the contribution you have made.

Just speaking here to those who may not be here when we come back into public session, I think this progress meeting has been very, very productive.

Progress meetings tend to be duller than the original sessions and more technical, because conclusions are made as to where we are going. The only way we can find out or determine whether we are keeping apace with the problem is to have fairly detailed technical reports and technical questions on each one of the operations.

Every subject we have had here -- and there are about 13 or so of them -- has been reported on with complete candor. At least, it has been my impression that we have had a full disclosure of the information.

In some areas I think we are moving on schedule. In some we have snags. In some we have potential snags. In several others, we will have to make a determination as to how we are going to move if we are going to move forward.

The conferees will determine this, or at least take it up in the executive session.

Mr. McKee suggests that the conferees be given a chance to think about the problem and possibly caucus with their staffs and confer during lunch. The conferees will meet in executive session at one o'clock.

I am sorry I cannot give you a judgment as to when the executive session deliberations will be complete and the conferees will come out. I would think it would be three, or a little thereafter.

We will stand recessed at this time.

(Whereupon, at 11:25 a.m., a recess was taken until 4:30 p.m.)

MR. STEIN: Let's reconvene.

In order not to keep you here all night, let's see if we can make a bona fide attempt in cooperating on this.

I have fifteen copies of this. I am going to ask Mrs. Piere to give this first to all the representatives of the press who are here, and then we will take care of everyone else in order, as we are reproducing more of these.

While she is doing this, I am happy to report that the conferees, voluble as we are, have arrived at unanimous conclusions and recommendations.

CONCLUSIONS AND RECOMMENDATIONS

MR. STEIN: The conferees appreciate the reports made to the progress meeting, which indicate that considerable progress has been made in meeting conference recommendations.

Recommendation No. 1

To meet the recommendations of the conference, the District of Columbia must have additional space for its waste treatment plant. Unless provision is made within 30 days for adequate space which can be integrated with the present Blue Plains facility, the conferees will meet to consider the consequences of alternatives. Among these will be the necessity for considering the ability of the District of Columbia to continue to fulfill its agreement with Maryland and Virginia authorities to provide treatment of their wastes.

ADDITION TO RECOMMENDATION 1

The following addition is made to the list of facilities discharging to tributaries and embayments of the Potomac River:

Facility	Preliminary Completed	Final Plans	Commence Construction	Operational
Naval Ordinance Laboratory	3/1/70	3/1/71	7/1/71	7/1/73

The Secretary of Health and Mental Hygiene of the State of Maryland has ordered the Washington Suburban Sanitary Commission to enlarge the Piscataway Sewage Treatment Plant to handle a flow of 30 million gallons per day on or before December 31, 1972. The Washington Suburban Sanitary Commission is required to meet the effluent standards in the conference recommendations. Compliance with removal of BOD will be achieved by the end of 1972 and further capabilities for removing phosphorus and nitrogen as shortly thereafter as possible.

RECOMMENDATION 3

Maryland Department of Water Resources reported on its progress to abate industrial waste in accordance with conference recommendations. This progress is proceeding on schedule and the conferees accept the report.

Studies undertaken by PEPCO (Potomac Electric Power Company) in accordance with the conference recommendations will be completed in accordance with the time schedule established by the conferees.

RECOMMENDATION 4

The Federal conferee will call a meeting of the conferees or their designees and such others as he may consider appropriate to determine the specifics of the Future Needs Study, including the groups to carry out the component parts of the study and the resources and the funding necessary. Consideration will be given to the sources of resources and funds. The Federal conferee will report his conclusions and recommendations to the other conferees in two months.

RECOMMENDATION 5

No comments.

RECOMMENDATION 6

Reports from Maryland indicate that the State program plans the construction of the advanced waste treatment plant at Piscataway in accordance with conference recommendations.

RECOMMENDATION 7

All jurisdictions concerned have active programs to control pollution from septic tanks. At present septic tanks are not significant contributors to the pollution of the Potomac River or its tributaries in the metropolitan area.

RECOMMENDATION 8

Montgomery, Prince Georges, and Fairfax Counties, and the District of Columbia, have adopted ordinances for the control of soil erosion. Future reports to the conferees will evaluate the effectivenss of the programs and report on action by the jurisdictions which have not yet initiated such ordinances.

RECOMMENDATION NO. 9

The conferees recognize the excellent program of the Corps of Engineers in debris cleaning of the Potomac River. It is recommended that full consideration be given to removing debris that is esthetically offensive.

RECOMMENDATION 10

No comments.

RECOMMENDATION 11

No comments.

RECOMMENDATION NO. 12

The conferees accepted the interim report of the Surveillance Committee and agreed that it was making satisfactory progress. Further reports and recommendations will be made by this committee at the next meeting of the conference.

The conferee representing the Interstate Commission on the Potomac River Basin will take action looking toward the implementation of the Sedimentation Subcommittee report.

RECOMMENDATION 13

No comment.

RECOMMENDATION 14

INCOPOT has complied with the conference recommendations and has scheduled a meeting on the Upper Potomac River Basin to be held November 12-14, 1969, and the lower basin meeting will be held in late April or May, 1970.

NEXT PROGRESS MEETING

The next progress meeting will be held in Washington, D. C., on May 21 and 22, 1970.

There are a lot of items here on which comments were not made, but these were items where interim reports were filed. Progress in accordance with the conference recommendations in preparing these reports is going along, and they will report further, but it was not necessary for the conferees to take any action at this time.

I have representatives from the various jurisdictions here. If anyone has any questions at this time, we will be happy to answer them, or I will ask some of the other conferees to do it.

MR. JIM McNEES: With reference to Recommendation 6, could someone expand on that a bit?

MR. COULTER: Jim, that is the recommendation that has to do with the construction of the five million gallon demonstration advanced waste treatment plant.

MR. STEIN: And that is going in accordance with the schedule and the plans that were agreed on by the conferees. Maryland has agreed to undertake this as part of its State program, and that is proceeding according to schedule.

Are there any other comments?

NEWS REPORTER: There is no comment on the District of Columbia's what is described as inability to finance tertiary treatment. Was there any discussion of that?

MR. STEIN: Yes. The conferees were taking first questions first, and I think the determination was made that the question that has the top priority was to get a site, because all discussion of financing becomes rather academic if you don't have a site to build it on.

One of the reasons we have conferees is to set priorities and make a clear joining of the issues. We all recognized that the solution of the site problem came first. Once we solve the site problem, we will move on to other questions.

We did not want to get into a full consideration of all these problems for fear of obscuring the ones that have priority. However, these have been noted for the record and will be taken up in an orderly manner.

Any other comments?

MR. McNEES: I have another one.

On the Piscataway plant, is it the sense of the conferees that the expanded plant of 30 million gallons conventional treatment will meet the guidelines of the May Enforcement Conference?

MR. STEIN: I think this statement speaks for itself.

This report indicates that, as far as BOD is concerned, they are going to complete the whole plant for secondary treatment and BOD and disinfection as scheduled for the 1973 date.

There is still the problem of phosphorus and nitrogen. There is extra time to comply with that. There is nothing in here that will indicate that a conference agreement will be violated.

However, as far as we have moved with this progress report, there has not been an absolute definitive statement on that date. We are confident that, as the program moves forward and we have these meetings, these issues will be resolved and the information will be forthcoming.

Again, you have to look at this in perspective -- that the nitrogen and phosphorus removal are relatively new techniques, and the engineers and the State program people, the jurisdictions responsible for the wastes, are working very carefully in feeling their way.

At the present time, as far as they have gone, we have a very optimistic report.

I do know this, and I hope, if I can speak for

Maryland, Maryland is as fully committed as we are to the conclusions and recommendations of the conferees for the requirements that are needed.

MR. McNEES: It sounds like Mr. Jensen is going to release some money. Is that right?

MR. STEIN: No. Now, here again, I want to make this abundantly clear, and I don't want to give anyone any wrong impressions.

The enforcement provision of the law is not necessarily related to the grant provisions of the law. We do our best to help everyone to try to get a grant where it is appropriate, but the obligation to provide for the requirements of a regulatory agency that a date be met does not automatically mean that a grant is going to be forthcoming.

I think it is safe to assume that wherever the funds are going to come from, the State of Maryland is satisfied that sufficient funds are going to be available for Piscataway from whatever source it gets these to meet the schedule that they outlined in this report. It does not necessarily mean that these funds come from Federal or any other particular source.

Are there any other comments or questions? Does anyone have anything he wants to say?

(No response.)

MR. STEIN: I would like to say here that, again, this whole process has been most useful.

Looking at the conclusions and recommendations, this is going to be useful to the press and the public, as well as the Federal officials. We have adopted the technique of having as full a disclosure as we possibly can. We are meeting at six-month intervals, so you can see just how and where we have made progress.

I think we have identified sources of hangups or problems, and where there are snags we are trying to meet them or set a process in motion that will meet them.

I think we have taken all the problems in the area, big and small, and met them head on.

Obviously, we have found some problems that are relatively small, like the septic tank contribution, but we have met it, and I think we put it in perspective and put it to rest.

In terms of other problems that are obviously going to be the big ones, I suspect that the big problems we have at this particular conference are not going to be the big ones at the next one. We have to look at how we have to move the program as each conference goes forward.

May I indicate too that the Maryland industrial problem is another one. You don't have a very big industrial problem in the metropolitan area, but the industrial problem is often a very vexing one. I think Mr. McKee has indicated a pretty definitive list of the industries. He has those industries under orders, the industries in the process of compliance, and

I am looking forward to having that industry list get smaller and smaller at each progress meeting.

In other words, I think we have broken through. There are several of these where we feel we are on the way, and some others where we have not come up with a definitive solution yet.

We have certainly given them priority, identified the issue and identified the next point in the program that has to be handled before the project can move forward, and we are going ahead and attacking those points.

If you look and examine the discussions and the conclusions, I think you will find that this has been done, and it can only be done with the full cooperation and free discussion which we have had with the conferees. I want to thank you all for that.

Are there any other questions?

(No response.)

MR. STEIN: If not, we will stand adjourned. Thank you all for coming.

(Whereupon, at 4:45 p.m., an adjournment was taken until May 21, 1970.)

J. W. DIXON
Consultant

Water Resources
Regional Economic Development
Flood Control
Marinas
Sedimentation & Erosion
Hydraulic Design

4651–24th Street North
Arlington, Virginia 22207 USA
Tel. Area Code 703 524-8110
Registered Professional Engineer
Registered Land Surveyor

(This letter was received after
the close of the conference.)

November 7, 1969

Mr. Murray Stein
Water Pollution Control Administration
Department of the Interior
Washington, D. C. 20242

Subject: Progress Meeting Potomac River
Washington Metropolitan Area Reinforcement
Conference, November 6 and 7, 1969

Dear Mr. Stein:

I appreciate very much your having permitted me to make a few remarks on November 6 during the morning session of the above-mentioned conference. During my remarks you pointed out that I should have appeared on the agenda under Item 13, rather than Item 4. Item 4 read on the agenda, "Future Needs Study." Item 13 was titled, "Watercraft Pollution Regulations." I had given the secretary my card stating that I would appreciate speaking on the subject of Item 4 as related to Item 13 and my name was called when Item 4 came up. You can readily see why I did not know in advance under which item my remarks should be included. Would you be so kind as to have my remarks inserted in the record under Item 13, if that is where they should have been placed.

In hurrying my remarks to a conclusion just prior to the adjournment for luncheon, you indicated from the rostrum that I could extend my remarks when Item 13 came up, and later, when I inquired as to a guess on your part when I should probably be at the meeting, you indicated late in the morning of November 7 or early in the afternoon. When I arrived late during the morning of today, November 7, your meeting had just been concluded for remarks and I inquired from your staff whether it would be appropriate to send this letter to you in lieu of the added remarks and the response was affirmative. My additional remarks are brief and are as follows and I presume should be incorporated with the transcript of any statements that I made orally yesterday:

1. Because many boats in the Washington Metropolitan Area operate in both Virginia and Maryland due to the manner in which the Potomac River and Chesapeake Bay are divided between the states, it is extremely desirable, if not essential, that whatever facilities for "heads" on small watercraft be similar or identical.

2. This applies not only in the Washington Metropolitan Area, but throughout the entire Potomac and Chesapeake Bay.

3. Similar conclusions would be reached when one considers that many craft travel annually from this area down the intercoastal waterway to Florida for the winter and back in the spring, therefore, other states would be involved.

4. I had started, during my oral remarks, to mention a recent 380 mile trip that I made down the Potomac River, down the Bay and up the Rappahannock River and return. During the trip I stopped at many marinas to inquire if facilities were available for pumping effluents from watercraft. The answer was in all cases -- "No". I did find, however, that these marina operators were somewhat familiar with what has happened in some of the Great Lake states where the state not only provided such pumping facilities but also participated with private marina operators in meeting these costs which the operators felt was necessary to their continued operation.

5. Following yesterday's meeting and my oral statement, I talked with Mr. Eugene Jenson and Mr. Paul McKee, and learned that consideration was being given to other types of facilities in small crafts than any of the types being considered by the use of holding tanks which would and do seriously encumber the operation of small watercraft and that the Anacostia Marina test resulted in Congressman Blatnik's statement which, in effect, was -- Now we have the law but we do not seem to have the technique. His remarks were widely publicized in the press. As the holding tank for my boat, by way of illustration, would have to be about 40 gallons, or the equivalent weight of two men, located near the stern of the boat, assuming that you are familiar with such types of watercraft, I am sure you can realize what the addition of this weight near the stern of such craft would do to its successful operation.

6. During the conversation with Messrs. Jenson and McKee, two other types of facilities were mentioned:

(a) A burning type of facility operated with propane gas. As you know, propane gas is highly volatile, heavier than air, and presents such a fire hazard and explosion hazard on boats that insurance rates on boats thus equipped are much higher than boats equipped with appropriate gasoline engines and gasoline tanks and other types of heads.

(b) Airplane type of heads. I do not see from the records of FWPCA research contracts that any research has been undertaken by your Agency on this type of facility, though from our conversations it sounded more promising than the holding tanks or burning process.

As I stated orally, I am sincerely in support of your objectives with regard to small watercraft even though they represent in terms of pollutants added to the river considerably less than 1%, and that is why I contratulated your Agency and the states of Maryland and Virginia in attacking the major source first. It would appear that this would give you adequate opportunity to do the necessary research on alternatives to the holding tank type of facility now appearing to receive more of your favorable consideration.

As a Consulting Engineer in Water Resources and Regional Economic Development, and as a boat owner, I urge very strongly that such research be carried out prior to the adoption of a type of facility to be used on craft of say 30 ft. or less in length.

Again, with my appreciation, I am

Sincerely yours,

JW Dixon

J. W. Dixon, P.E.

JWD/s

cc: Mr. Eugene T. Jensen, Regional Director
Middle Atlantic Region
Federal Water Pollution Control Administration
918 Emmet Street
Charlottesville, Virginia 22901

Mr. Paul McKee, Director
Maryland Department of Water Resources
State Office Building
Annapolis, Maryland 21401

MARVIN MANDEL
GOVERNOR

STATE OF MARYLAND
DEPARTMENT OF NATURAL RESOURCES
STATE OFFICE BUILDING
ANNAPOLIS 21401

J. MILLARD TAWES
SECRETARY

JAMES B. COULTER
DEPUTY SECRETARY

November 13, 1969

Mr. Murray Stein
Assistant Commissioner Enforcement
Federal Water Pollution Control Administration
U. S. Department of the Interior
Washington, D. C. 20242

Dear Murray:

Enclosed are two copies of the testimony on the Piscataway Sewage Treatment Plant. I presented it at a hearing held May 20, 1969 before the Committee on Interior and Insular Affairs, Subcommittee on National Parks and Recreation, to consider the matter of a proposed sewer conduit crossing of Piscataway Park lands.

This is the material I agreed to furnish for the record at progress meeting of the Potomac River Conference on November 7, 1969.

Sincerely yours,

James B. Coulter

JBC/m

AFTERNOON SESSION

2:05 p.m.

Mr. Taylor. The Subcommittee on National Parks and Recreation will now come to order.

Our next witness is Mr. James B. Coulter, Assistant Commissioner for Environmental Health Services, the Maryland Department of Health.

STATEMENT OF JAMES B. COULTER, ASSISTANT COMMISSIONER, ENVIRONMENTAL HEALTH SERVICES, MARYLAND STATE DEPARTMENT OF HEALTH

Mr. Coulter. Mr. Chairman, members of the Committee, I am James B. Coulter, Assistant Commissioner for Environmental Health Services, Maryland State Health Department. My responsibilities include regulation of the construction and operation of sewage purification works throughout the State of Maryland. The Piscataway Wastewater Treatment Plant, like all other sewage treatment planst in the State of Maryland, is under the surveillance of my office.

At the outset, let me express my gratitude to the members of the Committee on Interior and Insular Affairs for the long and tireless effort this Committee has made to preserve and enhance the beauty of the Potomac River. This is a goal we share in common. Even in the face of lagging Federal appropriations to support the national water pollution control effort, Maryland is determined that all of its citizens will be served by the best sewage purification works available under current technology as rapidly as possible. We have every confidence that by the end of 1970, financing will be arranged so that the backlog of accumulated needs for sewage treatment will be erased. To that end, Maryland's General Assembly has advanced more than $175 million in a bond fund to help finance sewage treatment plants. That money is used not only to finance an outright State grant, but it is also used to prefinance the full amount of the Federal grant to which works would be entitled if Federal appropriations were large enough to do the job.

In addition to the generous financing provisions, there are other features of Maryland's water pollution control program that may assist this Committee in its deliberations. Maryland has adopted water quality standards for all waters of the State. These standards were adopted after extensive public hearings and have been approved by the Secretary of the Department of the Interior.

Therefore, standards adopted for interstate waters, including the Potomac, are Federal as well as State standards. While many persons have praised the high standards set by the State of Maryland, we do not intend that those water quality standards will become a level of permissible pollution. With respect to municipal sewage treatment plants such as Piscataway, it is the policy of the State that the owner will provide the highest level of purification that available technology will permit and in no case will a sewage treatment plant be permitted where, even with the best available technology, the installation of the plant would result in water quality lower than that permitted by the State.

In other words, the State expects the Washington Suburban Sanitary Commission to produce an effluent at the Piscataway treatment plant which is as pure as modern technology and good operation will permit. This is an important point because the quality of water that we expect from Piscataway is much higher than that which would be required if it were out intention to merely meet the water quality standards.

By State law, Maryland has required the governing body of each of its political subdivisions to develop a comprehensive water supply and sewerage plan. Only projects included in that plan, which is updated annually, will be eligible for State or Federal grants. We also recognize that a well-designed and well-built facility is not likely to produce good results unless it is operated properly. To that end, Maryland is financing training courses for superintendents of water and sewage works at four community colleges. Last year, 191 persons availed themselves of that State-financed training and approximately 200 persons are enrolled in the courses at the present time.

With your indulgence, I have recited these facts, not to impress you with the mechanics of the State's program, but hopefully to give you assurances that Maryland does mean business when it comes to this important matter of water pollution control.

Perhaps I might clear up some misconceptions about the Piscataway plant itself. First of all, the Piscataway Wastewater Treatment Plant is not a temporary or interim facility in any sense of the word. We consider it a very important element of a network of water pollution control installations which must be developed along the Potomac to serve the expanding metropolitan area and eliminate the disgraceful polluted condition of the Potomac. To accommodate the rapid growth in the Piscataway area, we have asked the Washington Suburban Sanitary Commission to proceed as rapidly as possible to increase the capacity of that plant to 30 million gallons per day.

A suggestion has been made that Piscataway is the wrong site, and that the plant should be located at Mattawoman in Charles County. That course of action would be unwarranted and unwise. The Mattawoman site is needed to serve the northern portion of Charles County and that portion of Prince George's County lying in the Mattawoman Basin. There will be another sewage treatment plant at Mason Neck on the Virginia side, almost opposite the Mattawoman plant. Calculations utilizing the mathematical model developed by the Federal

Water Pollution Control Administration show that nothing would be served by moving the load from Piscataway to Mattawoman and, in fact, with the development on the Virginia side a more severe condition might be created. We believe that both the Mattawoman and Piscataway sites are essential to serve the ultimate development of the metropolitan area.

Recent results illustrate that the Piscataway Wastewater Plant is the model installation that it was intended to be. During the month of April, the plant averaged 93 percent removal of biochemical oxygen demand. On several occasions, the oxygen dissolved in the effluent was greater than the demand exerted by the effluent so that the purified water from the Piscataway Plant was actually an asset to the Potomac River rather than a source of pollution.

An impressive list of experts have considered the matter of the location of the point of discharge for the Piscataway plant and have unanimously agreed that the effluent should be discharged direct to the Potomac River. It is my fervent hope that this Committee, after it carefully reviews the pertinent facts, will join with the Congressional Delegation of Maryland and urge the Park Service to allow the effluent pipe access across Park land to the Potomac River.

Mr. Chairman, that is the end of my statement. Governor Marvin Mandel has asked me, with the permission of Congressman Aspinall, to read a letter which the Governor delivered to me last night. I have Congressman Aspinall's letter; I would like to read it.

Mr. Taylor. In the absence of objection, you may.

Mr. Aspinall. It is not my letter, it is his letter. If he wants it read, read it.

Mr. Coulter. "Dear Congressman Aspinall:

"I am pleased that your Committee is investigating the issue of the routing of the pipeline through property of the National Park Service for the discharge of treated effluent into the Potomac River from the Piscataway plant. The solution to this matter has been long delayed and clouded by numerous and conflicting statements. It is important that the delays be ended and the problem be resolved. It is my earnest hope, Mr. Chairman, that you can direct the Federal authorities to proceed expeditiously to a satisfactory and early resolution of the question.

"The Washington Suburban Sanitary Commission is a public agency directed by appointed officials. Until a few years ago, it was the privilege of the Governor to make the appointments to this body. To assure that the Commission was more responsive to the local needs, the Governor of this States signed legislation transferring the appointment power to the local county governing bodies. It is my observation that the Sanitary Commissioners are doing their job well and that the Prince George's County Commissioners are unreservedly supporting their performance and proposals in the solution of the Piscataway sewage problems.

"The Santiary Commission planned a treatment plant at a location closer to the river some nine years ago. When they learned that the Federal Government wished to establish a park on the same site, the Commission easily could have preempted the location. Instead they deferred construction for over a year to provide time for one of the members of your Committee to sponsor legislation and move it through the Federal Congress. Without this cooperation from the Sanitary Commission, there would be no Federal park at this location today.

"The cooperation of the Commission with the Department of Interior and most especially with the National Park Service has been exemplary. They had the assurance of the previous Secretary of the Interior of full cooperation in working out the pipeline location and construction. The Regional Director of the national Park Service has stated that the pipeline location meets with his approval and that he is raddy to issue the permit for its construction. Unfortunately, he has been placed under inordinate pressure not to proceed.

"The Commissioner of Health of the State of Maryland has assured me that his technical staff has made an intensive review of the operation of the Piscataway plant. The minor problems associated with starting up a new plant have been properly corrected and the plant is producing an effluent that meets the Water Quality Standards of the State of Maryland as previously approved by the Secretary of the Interior. Continued surveillance by the State authorities will assure compliance at all times.

"Further delay of the pipeline construction will seriously and adversely affect the economy of Prince George's County and of the State of Maryland. There appear to be no valid reasons for continuing to delay the issuance of a permit for construction of a pipeline through the park property. It is my earnest hope that your Committee will see that there are no impossible conditions in such a permit that would push the construction beyond the realm of reasonableness. The technical details of water quality, treatment and surveillance are the responsibility of appropriate State agencies.

"It is my earnest hope that this Committee will move expeditiously for the final resolution of this problem.

"Sincerely, Marvin Mandel, Governor."

Mr. Taylor. Mr. Coulter, I thank you for your statement. You have a mighty fine attitude. I personally appreciate your recognizing what you call the tireless efforts of this Committee to preserve and enhance the beauty of the Potomac River. Of course, our main concern is the park, but the River is an important part of it.

You state that with respect to municipal sewage treatment plants, such as Piscataway, it is the policy of the State that the owner will provide the highest level of purification that available technology will permit. You are familiar with the Piscataway facilities?

Mr. Coulter. Yes, sir, I am.

Mr. Taylor. In your opinion, does it meet this test?

Mr. Coulter. At the time the plant was constructed, this was the most modern sewage treatment plant that we could construct.

Mr. Taylor. What improvements have been devised since then in technology?

Mr. Coulter. There have been a number of advances made. There are experimental studies in progress now that may prove to be workable on a full-scale installation. Principally, these improvements have to do with removal or soluble materials that are not removed by bacteria.

Mr. Taylor. You are familiar with the expansion plans that they have for this location?

Mr. Coulter. My familiarity at the moment is limited to the insistence of my office that Washington Suburban proceed as rapidly as possible to increase the capacity of the plant to 30 million gallons a day.

Mr. Taylor. We, too, are interested in providing the highest level of purification that modern technology will permit because, as you say, of our desire to clean up the Potomac River and, in this case, protect the park. I was hoping you would know whether or not the plans do come up to that high standard.

Mr. Coulter. Well, sir, we have received the preliminary construction schedule from the engineers for Washington Suburban Sanitary Commission which would increase this capacity to 15 million gallons per day by December of 1970 by increasing the aeration capacity in the activiated sludge portion of the plant, and thereby being able to recirculate quite a bit of the material.

We have sent these preliminary intentions, what they amount to right now, to the Federal Water Pollution Control Administration. Mr. Jensen has informed me that they are bringing them back to us and that the Federal and State Governments will sit down in conference and see how these preliminary proposals fit in with what we believe will be a recommendation from the Secretary of the Interior's conference on the Potomac of this month.

Mr. Taylor. The gentleman from Colorado.

Mr. Aspinall. Mr. Coulter, I do not understand one statement you made that appears on page three: "On several occasions, the oxygen dissolved in the effluent was greater than the demand exerted by the effluent so that the purified water from the Piscataway plant was actually an asset to the Potomac River rather than a source of pollution."

What do you mean by that?

Mr. Coulter. All right, sir, I shall elaborate.

The layman normally associates the strength of treated effluent with the so-called biological oxygen demand of the effluent, which is really the fuel content, if we might put it that way. It is the amount of material which will burn up in the air. Instead of burning in the air, it burns in the water, and it utilizes oxygen.

In this case, the amount of fuel available to burn oxygen was actually less than the amount of oxygen that was dissolved in the sewage treatment plant effluent, so we could discharge the entire amount of the effluent and have some oxygen left over to help the zero conditions which were observed out in the Potomac River last week.

Mr. Aspinall. You do not mean to tell me that this situation would result in the amount of the pure water of a stream in Colorado, do you? What you are telling me is that this is better than what is in the Potomac River, which is already polluted. Is that what you are telling me?

Mr. Coulter. That is what I am saying. I further would assert and maintain that the salvation for the Potomac River and many of our major rivers is to receive sewage and cleanse it and purify it to the extent that it is an asset to the river.

Mr. Aspinall. But if the Potomac River was cleaned out so that it did not have all of this pollution in it, this statement then would not necessarily be true to the degree that you say it is at the present time? In other words, it would be flowing into, we shall say, pure water from the Potomac and also sea water coming in from the ocean by tide. If this were good water, then this statement could not be true, but the water being what it is at the present time, this situation that you suggest comes out of this plant at various times helps to remedy some of the pollution that is in there now. Is that right?

Mr. Coulter. That is correct, yes, sir.

Mr. Aspinall. Do you know the difference between National Parks and Recreational Areas and other facilities that the Federal Government engages in?

Mr. Coulter. Yes, sir.

Mr. Aspinall. We went to far as to make this a national park. When we have a national park area, there are certain uses that we just do not condone in national parks. This perhaps condones some of the uses that we otherwise would not because they were already there. But what assurance do we have if a facility such as is desired in this instance is placed in there that we will not have requests to further dilute the National Park atmosphere, requests for further roads to move traffic in which, in that area, could be very desirable, water lines, power lines, additional sewer lines, and so forth? Where do we stop and also keep the national park values that exist in the area?

Mr. Coulter. Each one of those situations, of course, Mr. Aspinall, will be handled on its own merit.

Mr. Aspinall. Yes, but we set the pattern here. This is the thing that I want to be sure you understand.

Mr. Coulter. In the present instances, it is my opinion that if all the threats to the park from the discharge of effluent from this purification plant, that the major threat exists from the discharge of the effluent to Piscataway Bay, as it is now being discharged. There are cseveral alternatives that could be followed. The sewage from this part of Prince Georges County could go to the Blue Plains Sewage Treatment water. That is the wrong place in the estuary to put the effluent. That works is already overloaded and the adverse conditions would come right down to the park land as far as poor water quality of the river.

A second possibility would be to discharge directly into Piscataway Bay, do it deliberately and design the plant for that. But the water there is very shallow. It is one of nature's mixing bowls. It takes the light from the sunlight and carries on many, many reactions. Poor water, malfunction, change of operators, accident, could create some very severe conditions in Piscataway Bay.

The other alternative is to run a pipeline through the park land and carry the effluent to the river. In this case, there will be some initial destruction of the park property, but there is no reason why that pipe could not be buried and be out of sight. There is also no reason why the Federal and State people could not maintain the same kind of surveillance over that plant that they would if it were going into Piscataway Bay.

Mr. Aspinall. I am not interested in the plant operations. I am interested in the sewage line operation as it enters the park and as it leaves the park. This is the part I am interested in. I am interested in no disturbance of the area after the line is once in. I am interested in this not being used as a precedent for other installations to take place.

What is the answer to the question that you could take the sewage out into the middle of the river, out from Piscataway Bay, and dump it into the middle of the river, just the same as you can dump it into the middle of the river below Piscataway National Park, the same distance from the shores, and not have the same results in one place that you would have in the other? What is the answer to that?

Mr. Coulter. I am not sure that I understand the question.

Mr. Aspinall. I just do not understand. You say you could deliver this below Piscataway National Park, but you cannot deliver it in the same kind of a pipe line out to the middle of the river, out from Piscataway Bay. Why is it not just the same? What is the difference in the position along the river as far as pollution is concerned?

Mr. Coulter. Well, the difference is in the volume of water available, the amount of oxygen that is available, and in the reaction of the water itself, in nature, in the growth of weeds.

Mr. Aspinall. But the same amount of water is a mile below Piscataway National Park as there is right out from Piscataway Bay. It is the same amount of water in the river.

Mr. Coulter. Excuse me for being so dense. I did not understand the questions. You are talking in terms of taking the pipeline down below the park and then running it into the river?

Mr. Aspinall. That is what you intend to do.

Mr.Coulter. This would be an alternative, yes, sir.

Mr. Aspinall. This is what you intend to do now, take it through the Piscataway National Park and then take it into the river?

Mr. Coulter. Yes, sir.

Mr. Aspinall. You suggest you can do that better than if you just take it down Piscataway Bay and dump it into the river by the same means of pipe under water to the middle of the river.

Mr. Coulter. A pipe going down the Piscataway Bay would have to be thought through very carefully, because this would mean dredging and disturbance of the Bay and all kinds of ecological upsets which could have a rather long-range effect on the shoreline properties, including the park.

Mr. Aspinall. You are not going to have the same disturbance of ecological values if you take that line away from the shore on Piscataway National Park and send it out into the middle of the river? You are not going to dump this sewage, even though it comes out of the plant, right at the shore. You are going to take it out into the middle of the river.

Mr. Coulter. It is going out into the middle of the river yes, sir.

Mr. Aspinall. You are going to disturb natural environment as you do that, are you not?

Mr. Coulter. Yes, undoubtedly, but not to the extend and not the same kind of disturbance that you would have dredging up the muck and the material that is now desposited in Piscataway Bay and disturbing that material. There are altogether different kinds of deposits. It is something like dredging Baltimore Harbor. We just will not permit it if we can stop it.

Mr. Aspinall. I think that is all.

Mr. Taylor. The gentleman from Pennsylvania.

Mr. Saylor. Mr. Coulter, how long have you been the Assistant Commissioner of Environmental Services of the Maryland Department of Health?

Mr. Coulter. A little over three years, sir.

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Mr. Saylor. What did you do before that?

Mr. Coulter. I worked with the Federal Water Pollution Control Administration in the development of regional programs.

Mr. Saylor. Now, you have been there for three years. Then you were in that position in 1967, is that correct?

Mr. Coulter. That is correct, yes, sir.

Mr. Saylor. The witnesses we had this morning said that in the fall of 1967, this Piscataway plant began to operate with a permit of five million gallons per day. Is that correct?

Mr. Coulter. That is correct, yes, sir.

Mr. Saylor. At the present time, according to the witnesses this morning, they are operating under a permit from the State of Maryland to increase that flow to eight million gallons per day. Is that correct?

Mr. Coulter. That is correct.

Mr. Saylor. Now, who permitted the plant designed for five million gallon capacity to run into a seven to eight million gallon permit?

Mr. Coulter. The answer is no one.

Mr. Saylor. No one.

Mr. Coulter. If the plant had not been designed for eight million gallons per day, we would not have permitted it to go to eight million gallons per day.

Mr. Saylor. You are the first person who has told us that the plant was designed for eight million gallons. All the records that have been submitted since 1964 indicate that if this plant were to be built, it was to be an interim plant of five million gallons per day.

Mr. Coulter. Well, sir, I do not read the record that way.

Mr. Saylor. Well, let me read the record to you, then.

On October 26, 1962, George Martin, Senior Engineer of the Maryland National Capital Park and Planning Commission, wrote an official letter stating:

"The Wolman-Geier Report . . . recommends an interim plant on Piscataway for 10-15 years use until a plant at Mattawoman can be built. Washington Suburban Sanitary Commission has the necessary contribution in hand and needs only to find the site.

"Although the map on page 51 of the General Plan proposes the same area for camping and other outdoor recreation, in our opinion, this is not an inconsistency. We believe the two uses -- treatment plant and recreation -- are compatible if the site for the sewage plant is large enough.

"We reassure you of our position. We are on record as favoring the Mattawoman plant as a long-range solution and remain firm on this recommendation in our comment in this year's sanitary commission program. Your point about the tidal currents pushing sewage upstream is well taken. This is probably the best argument for locating the treatment plant on the Mattawoman."

Now, that has been the position before you had anything to do with the State of Maryland. It was the position of the National Planning group that told the group over in the county that this was to be a temporary affair of five million gallons. Now, the plans that were drawn say that it is for five million gallons per day, and somebody over there -- you say nobody was given the permit. Now, one of the two of you cannot be giving this Committee the straight story, because they say they have a permit to run it at seven and eight million gallons a day.

Mr. Coulter. Sir, they do have a permit from my office to run the plant at eight million gallons per day. That permit is based on a careful evaluation of the Piscataway Sewage Treatment Plant as constructed, which showed that that plant is capable of receiving an average flow of eight million gallons a day and producing an effluent and discharging it to the Piscataway Bay in a condition so that the water quality standards of this State will not be violated.

That decision was reviewed by the Federal Water Pollution Control Administration and concurred in. It was only after those careful evaluations and those determinations were made that my office issued the permit.

Mr. Saylor. All right, now. Then your story is that your office issued the permit and that they do have a permit?

Mr. Coulter. To operate at eight million gallons a day.

Mr. Saylor. All right. Now, as was explained by the engineer this morning, you operate on monthly averages. Now, if this is the case, how far above eight million gallons is this plant built to operate?

Mr. Coulter. We request that reports be reported on a daily basis. These daily results ---

Mr. Saylor. That is not what I asked you.

Mr. Coulter. Yes, sir, it is.

Mr. Saylor. It is not. I asked you how far, in view of the fact that you say your figures -- and the man said this morning that experts deal in monthly averages. What I want to know is, to get that average, you have to have a high and a low I want to know how high you go to average in a month eight million gallons.

Mr. Coulter. Sir, we control agencies deal on a daily basis. We require a plant to be built to handle an average daily flow. In the design of that plant, on some features of the plant, we require that the features be designed to handle two to two-and-a-half times the average daily flow. On other features, we require that the plant be designed to handle one-and-a-half times the daily flow.

This is all in standard engineering practice and in the procedures of the Office.

Mr. Saylor. All right, what is the capacity of this plant and how much capacity does it have to average eight million gallons a day in accordance with your permit?

Mr. Coulter. This plant has a rated capacity of eight million gallons per day. There are features of the plant that would permit, I believe, up to 16 million gallons per day on a hydraulic basis.

Mr. Saylor. In other words, you now say that the plant can operate at the present time with no changes whatsoever and produce an effluent that has 92 percent BOD removal? Is that my understanding?

Mr. Coulter. The plant is operating at the present time at a 92-percent BOD removal, yes, sir.

Mr. Saylor. And it can handle 16 million gallons and do that?

Mr. Coulter. Not on a sustained daily basis, no, sir. In fact, probably -- you see, the sewage treatment plant handles the sewage that is produced in communities. It has peaks and ---

Mr. Saylor. I am familiar, sir -- let us not assume that the members of this Committee are complete ignoramuses and do not know anything about this business. We have been dealing with some of these problems for a good many years, and this is one of them.

Mr. Coulter. I am not assuming that the Committee is ignoramuses. In fact, to the contrary, I think they are quite intelligent, capable people. But I would like to deal with the question that you asked me in a way that is meaningful.

A sewage treatment plant, although it is rated eight million gallons a day, will take peak flows at a higher capacity in perfectly normal operation and we would not censor the operators for running, say, to ten million gallons per day at a plant that is rated at eight million gallons per day, because this is inherent in the design and it is worked in by the engineers who design the plant.

Mr. Saylor. In other words,what you are telling us is when a plant now operates at 12 million gallons, what is the BOD removal at that point?

Mr. Coulter. Sir, if the plant is operating at an average rate of 12 million gallons per day, we would step in and exercise the power of the State to bring it back to the eight million gallons that we permit it to operate at.

Mr. Saylor. You say that you do a pretty good job down there. Do you think -- you think this plant is operating quite efficiently. How many times have you been there?

Mr. Coulter. I think I personally have been at the plant four times.

Mr. Saylor. How many times have your inspectors been there?

Mr. Coulter. I could not answer that without checking the records.. They are there frequently.

Mr. Saylor. Do you have reports to show that they are there daily?

Mr. Coulter. They are not there daily.

Mr. Saylor. Are they there once a week, twice a week?

Mr. Coulter. No, sir, they are not there twice a week. There are times when they are there for a period of several days. I can submit to the Committee the number of times that our inspectors have been at the plant. It has been quite frequent, with the interest this plant has had.

Mr. Saylor. What you are telling us, then, is that basically, you are making your report to this Committee from information that you received from the plant and the WSSC records?

Mr. Coulter. From the plant operating records, from our evaluation of the plant, and from the studies and testing that have been done by the Federal people.

Mr. Saylor. Well now, in view of the fact that I read to you a letter of George Martin, Senior Engineer, how do you explain your statement in the record: "A suggestion has been made that Piscataway is the wrong site, and that the plant should be located at Mattawoman in Charles County. That course of action would be unwarranted and unwise."

That is what this Committee was told and the reason that some of these permits were granted back in 1962. We were told that this was interim plant and that Mattawoman was to be the solution.

Mr. Coulter. Sir, I do not know where Mr. Martin got his information. It is not the information that the official agencies are proceeding under. The information we are proceeding under is the Wolman-Geier Report in general, which has been adopted by the Council of Governments, the Regional Sanitation Advisory Board of the Council of Governments, and so on.

That calls for two sewage treatment plants, one at Mattawoman, one at Piscataway. The sewage treatment plant at Mattawoman is now in the process of construction. That is, a grant offer has been made, rights of way are being secured, and that plant will be constructed. That plant will have its hands full to take the load from the Waldorf area, from northern Charles County, from that portion of Prince Georges County that lies in the Mattawoman Basin.

It is also expected that that plant will serve the Mattawoman, the Zekiah, and the Port Tobacco Drainage areas until such time as facilities are built over there.

In addition to that, the State of Virginia, again proceeding in accordance with its plans, is planning its sewage treatment plant directly across the river at Mason's Neck. The plant at Piscataway could not have been a temporary or interim sewage plant under either Federal or State regulations and be eligible for a grant. It has to be a permanent facility to solve a water pollution problem to be eligible for a Federal Water Pollution Control Administration construction grant. This plant did qualify and received a grant of some $600,000. At the same time, it received a grant of $400,000 from the State Government, and both agencies would insist that this be a permanent plant before they would make a grant offer.

Mr. Saylor. Well, you show me anywhere in your records in the State or the Federal Government,of the Federal Water Pollution Control Organization, why they ever anticipated that there would be a 30- to 60-million or 80-million-gallon plant at Piscataway.

Mr. Coulter. I can search the record for such a piece of correspondence. I am sure that there would be some kind of a forecast in the grant application, because generally, a sewage treatment plant is built for ten years' growth. The reasons for that are very well founded in sanitary engineering.

The Piscataway plant will serve an area of about 80 to 100 square miles. With the population projections that we now have in the Washington Metropolitan area which show Prince Georges County going to 1.6 million instead of 1.1 million originally projected, we must assume that this area is going to grow. If it grows to the size of the metropolitan area, with the density that has been achieved other places in the Washington area, it could conceivably have as many as

12,000 persons per square mile. This would be a sewage load generated, then, of something like 120 million gallons.

Now, no one knows that this basin will grow that fast or to that extent or ever reach that kind of load, but in all fairness to the Committee and everyone else, I think we have to say that one possibility would be to treat the load generated in this basin at the Piscataway site.

Mr. Saylor. You would treat, in other words, in your best professional judgment, you are notifying the Committee now that in years to come, those who will sit on this Committee within 10 to 20 years will have not just the request for 30 million gallons, but it might be 120 million gallons. Is that correct?

Mr. Coulter. That is correct, in the years to come.

Mr. Saylor. All right. Considering that fact and in view of the fact that the Mattawoman plant is downstream, are there any plans for the interconnection between this plant and the plant at Mattawoman Creek?

Mr. Coulter. That plan exists as a conception in the minds of some people responsible for this, including my own. I think we will see the day when it will be very sad that the Blue Plains Sewage Treatment Plant was built and is being built to the size that it is.. We will be sad that we built the long intercept sewer from Dulles Airport and brought all of that sewage down to the Blue Plains area.

I think it is extremely important that we think in terms of a network of interconnected sewage treatment plants capable of the very highest degree of purification that can produce effluent which is an asset to the Potomac River during times of stress in order to counteract the many sources of uncontrolled waste that will go into that river as this metropolitan area grows.

To do this, one way that we have visualized on the Maryland side, at least, is simply to regionalize all of our sewage treatment plants and operate them as you would s series of interconnected power stations, each plant picking up the load to help the other one along, depending upon river conditions, flow, the possibility of sewage treatment plants being out of operation for enlargement or construction, or for one reason or another.

We visualize this, sir, but we have not planned it at this moment.

Mr. Saylor. Let me say to you, Mr. Coulter, that is the best statement that has been made here today. I say that very honestly. I am glad to know that at least some people are thinking along those lines, because if you are going to solve this problem, it is only going to be that sort of approach that will ever solve it, and you are going to have to upgrade every one of the plants that you have over there now -- Blue Plains, Piscataway, Mattawoman, or whatever else you have.

It is going to have to take place not only on the Maryland side of the river, but it is going to have to take place in the District of Columbia, and on the Virginia side of the river.

Now, the statement that you have just made is the first ray of hope that I have seen from anybody trying to clean up the mess on the Potomac River, in this estuary. It is the principal responsibility, a great deal of it, of the State of Maryland.

Mr. Coulter. Yes, sir.

Mr. Saylor. Because of the place where the Virginia line runs. You have the basic responsibility for most of it.

One of the greatest assets the State of Maryland has is the Chesapeake Bay, and unless something is done in this Potomac Basin, the Chesapeake Bay is in danger.

Now, in charge of health, as you are, all of your fish life down there in the Chesapeake Bay is in danger. I certainly hope that somewhere, whether you continue to do it or whosoever has your job, in charge of the health in the State of Maryland, that they take this long look at the problem of the burgeoning population here in the metropolitan area, particularly on the Maryland side of the river.

Now, that is the finest thing I have heard since the hearings were suggested.

Now, let me ask you this: you say that by State law, Maryland requires a governing body of each of the political subdivisions to develop a comprehensive water supply and sewage plant. Is there a plan for Prince Georges County?

Mr. Coulter. No, sir. It is in the process of being prepared and it is due in our office in January of this year.

Mr. Saylor. When was the State law passed?

Mr. Coulter. It was passed, I believe, in 1967, sir, and it set the guideline of January 1970 that all the counties must have these plans developed, and they are operating on that now.

Mr. Saylor. Of course, if the State Legislature down there continues to do things the way they have in the past, I shall probably expect to see a change in the State law, because I was just relying on my recollection this morning of things I have read in the paper, but since then, I have been furnished excerpts from the Washington Post showing that exactly at the stroke of midnight, cavalry in the form of members of the legislature, rode in saving Peter A. Bozick by granting him another term on the Washington Suburban Sanitary Commission.

I did not know, I was relying on my memory up until that point. But I called downtown and asked the people at the newspaper to furnish me with the information, and seeing the manner in which it was done, I would not be surprised to find somebody trying to take care of the laws governing the planning of the comprehensive water plan for Prince Georges County. However, I think we are in a pretty good position.

Those same politicians over there do not run the Congress and 434 of us who come from other sections of the country, I think, are going to insist -- I think my memory is correct -- that if the State does not comply by that time, the Federal statute steps in and takes over

Is that not correct?

Mr. Coulter. That is correct, sir.

Mr. Saylor. So that even if they try to finagle over there with that Commission again, and they do not come up with a plan, the Federal law will supersede the State law and they will be in contempt of the Federal Government.

Now, it is your firm conviction, then, following up the last sentence on page two, that as you read the record, the Piscataway treatment plant is not a temporary or interim facility?

Mr. Coulter. No, sir.

Mr. Saylor. How long will it take the Washington Suburban Sanitary Commission to increase the plant at Piscataway to 30 million gallons a day?

Mr. Coulter. The plan calls for increase in steps so there are 15 million gallons capacity available by December of 1970. The full 30 million gallons by the summer of 1972, I believe it is.

Mr. Saylor. Was this recommendation to the Washington Suburban Sanitary Commission made with the knowledge that from time to time the plant has operated up to 92 percent of efficiency?

Mr. Coulter. Yes, sir.

Mr. Saylor. Why did you do it, then?

Mr. Coulter. Well, we did it because the 92 percent efficiency that people talk about is a misnomer. It is not precise. It has no real meaning. If we talk about percent removal of a treatment plant, we could characterize the Piscataway treatment plant as a 99.999 removal plant, because this plant receives bacteria in the order of magnitude of 50 million and turns out an effluent that is somewhere less than 10.

If we talked about the necessity to remove phosphorous, we would have to say this plant right now is a 22-percent plant.

Mr. Saylor. That is only because you only have secondary treatment, is it not? In other words, this is the usual amount that is taken out -- there is very little phosphate taken out when you have primary treatment?

Mr. Coulter. Practically none.

Mr. Saylor. That is right, and when you have a secondary treatment, you take out somewhere between 20 and 25 percent?

Mr. Coulter. We have one secondary treatment plant in the State of Maryland that is removing 95 percent of the phosphorous.

Mr. Saylor. Where is that located? I would like to visit that one.

Mr. Coulter. This is the portion of the Back River sewage treatment plant that is delivering its effluent to the Bethelehem Steel Mill for use in the industrial process.

Mr. Saylor. That is out near Sparrow's Point?

Mr. Coulter. Yes, sir.

We think that is phosphorous removal is a requirement and is necessary, there are many adjustments that we can make within the framework of design that we have now to greatly enhance phosphate removal. This is one of the things that we will be talking about with the Federal agencies and with the owner of the plant.

Mr. Saylor. All right, then. You can remove, however, with tertiary treatment a great deal more of the phosphate and the nitrate content of the water?

Mr. Coulter. Sir, I do not want to equivocate with you or the Committee, but the words "tertiary treatment" have absolutely no meaning to me as a regulatory official or an engineer. When we know what we must remove from that water or what we can remove from that water to enhance the Potomac, we will put that unit process in and use it. There has been so much of my time and energy in my office taken up by replying to requests or complaints or information from people complaining that the plant is only removing 91 percent or 92 percent or 96 percent, that I really, as a human being and an individual and a trained engineer, rebel against this kind of jargon in the rype of technology ---

Mr. Saylor. Very frankly, let me put it this way: it was you sanitary engineers who started the jargon.

Mr. Coulter. Yes, sir, and if I had my way, I would ---

Mr. Saylor. You started the jargon and if we who are not engineers use it, I hope we do not disturb you too much. We have relied on the experts for our terminology.

Mr. Coulter. You are perfectly correct. and I am shamefully sorry for my profession that "tertiary" has absolutely no meaning. Try to get one of my cohorts to define it for you and see what kind of gobblydegook he comes up with.

In the application of science and technology, we can talk about clarifying water of given contaminants or classes of contaminants. That is what I think we should be talking about.

Mr. Saylor. In the end, is the desire of the Department of Health of the State of Maryland to produce usable water for municipal purposes from our sewage treatment plants?

Mr. Coulter. We are doing that in the State of Maryland now and have been doing it for very many years. It started, I believe, under the very able direction of Dr. Wolman, who was here with you today, where the effluent from a sewage treatment plant is used in industrial processes.

Mr. Saylor. If that is the case then, why not upgrade the Piscataway plant and put the effluent in Piscataway Bay?

Mr. Coulter. This is a possibility, sir, and it runs the risk of damage to the park, and that is the only reason why I am opposed to it.

Mr. Saylor. It runs a chance of what?

Mr. Coulter. There is the risk of damage to the park, to the park property and to the people who live on the shores of Piscataway Bay, because I know that even with the most carefully operated facility, we have blackouts, we had the rupture of a wager main in Baltimore City.

When we start talking about the high level of purification required to discharge 30 million gallons of effluent into Piscataway Bay, I am sure that two things will happen: first of all,the natural processes in that bay will continue to cause odors and unsightly conditions, and people will declare that it is the result of the sewage treatment plant even if it were turning out distilled water.

This is a rule of human behavior that I have learned, sir.

The second thing is that with these delicate processes that we are talking about, there is the possibility of malfunction and you could get a slug of material out into Piscataway Bay which could cause very unsatisfactory conditions there, for just a short period of time discharging into it. It could be corrected quickly and gotten back into phase, but the matter might linger for days or weeks.

It is this kind of damage or risk that you run into in the park if you discharge the effluent into Piscataway Bay. As a technical person, I can believe that I can require the design of a sewage treatment plant capable of discharging an effluent into Piscataway Bay that will meet the water quality standards. But I am sure that this Committee does not want that and I do not want it.

Mr. Saylor. In other words, what you are warning us about is that since this plant is operated by people, we might look forward to any number of human failures along the way, so as a matter of precaution, you want to build the pipeline through the park and out into the middle of the Potomac River so that if, as and when you get a sludge or a human failure due to blackout or any other reason, the sewage will be deposited in the middle of the Potomac River rather than in Piscataway Bay?

Mr. Coulter. Yes, sir, that is exactly what I mean. Piscataway Bay has an assimilative capacity -- and I hate mysel for using that word, too -- of about 4,000 pounds of oxygen per day. The Potomac River, at the point we are talking about, has an assimilative capacity of about 135,000 pounds of oxygen per day. A slight deficiency in operation of the plant could cause some very bad conditions in Piscataway Bay that would never show up in any measurements or any water use or any discernible characteristics of the river itself. That is the danger that I am pointing out.

Mr. Saylor. If this were a free-flowing river and not an estuary, I could buy that. But in view of the fact that this is an estuary, subject to the tides, I cannot buy it. I will buy your proposition if you put this in a free-flowing river, but I cannot buy it from an engineering standpoing where you are putting it out in front of Mt. Vernon, because that is where it is going.

Recent results illustrate that our Piscataway water treatment is a model installation. What results are they?

Mr. Coulter. These are the results for March and April -- let us stick with April. If we consider model in what frame of reference?

Right now, the recommendations of the Department of the Interior which we are obligated to meet, the recommendations that come from the Conference on the Potomac River, are that all plans in the Washington Metropolitan Area will remove 80 percent of the biochemical oxygen demanding substances.

In view of that binding recommendation of 80 percent, we are removing 90 percent.

In terms of practice in the rest of the country, the rest of the country is still talking about a removal of biochemical oxygen demand greater than 85 percent as being another one of these jargon terms, advance waste treatment, and many of our national recommendations are to bring plans up to a level of 85 percent treatment. This plant is operating well over 90 percent.

There were some questions this morning about the relative quality of the effluent of the plant and that in the river. Mr. Aspinall has pointed out that the river is pretty badly polluted, so this is not a very good comparison. But by many, many yardsticks, the effluent coming from this plant is far better than the water that is flowing from the Potomac River at the moment.

Certainly, if all plants in this area used this plant as a model and came up to its level of performance, with the exception of something like 3-1/3 million gallons of sewage still coming out of Washington, D. C., the river would be in darned good shape.

Mr. Saylor. Do you have those records for April, or are they available?

Mr. Coulter. Yes, sir, I have a copy here and they are available

Mr. Saylor. Mr. Chairman, I ask unanimous consent that these records for April be made a part of the file.

Mr. Johnson (presiding). In the absence of objection. There is no objection.

(The information above-referred to, follows:)

(SUBCOMMITTEE INSERT)

Mr. Saylor. The last question I have has to do with your last paragraph. It says "An impressive list of experts." Give us a list of those experts, will you please. I want to know who they are.

Mr. Coulter. I think I would start with Dr. Abel Wolman, probably, as the country's outstanding expert, if not the world's outstanding expert. We are very fortunate to have him here to work on these kinds of problems.

The engineering firm of Whitman and Requardt of Baltimore, who did the study. The person of James B. Coulter, who has looked this over. The staff of the Water Pollution Control Administration in Charlottesville, with their staff of technical experts who have come to us. All of these people have concluded and urged that this pipe be run to the Potomac River.

Mr. Saylor. That is correct.

Now, you said that they have all agreed that it be run to the Potomac River, but they have not all agreed that it be run through the park. This is where I -- I have no argument with that. These experts have all agreed that the best place to place the effluent is in the middle of the river. But they have not all agreed that it should be run through the park.

Some of them think it should be run below the park, some think it should be run through Piscataway Bay, and out into the river. What we are actually being confronted with now is that the cheapest way for the Washington Suburban Sanitary

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Commission to build a line to take care of this effluent is through the park. Is that not a fact?

Mr. Coulter. Yes, sir, it is the most economical route for the pipeline.

Mr. Saylor. By the way, what about the statement that was made by that gentleman who testified this morning, who said that the increased flows in the sewage treatment plant came from runoffs, water coming in through manholes and other places, natural rain in the spring of the year. How good are the pipes that this Washington Suburban Sanitary Commission has put in?

Mr. Coulter. In my opinion, they are not good enough. It is one of the major concerns of my office that not only Washington Suburban Sanitary Commission but throughout the State, pipelines are constructed to carry sewage and they really spill sewage.

Mr. Saylor. That is true.

Mr. Coulter. We have a very concerted effort going on with the consulting engineers of the State and with the owners of collection systems to make the collection systems as fail-safe as we can do with modern technology and to stop some of this needless spilling of sewage.

Mr. Saylor. Once again, Mr. Coulter, I am delighted with that statement. But you had better notify these people that it is not always the fellow who gives the lowest bid who might have some inspectors that might look the other way when they begin to lay those pipes. If those pipes are not properly cradeled, if those pipes are not properly, the joints are not properly sealed -- because if they are, you do not have this leakage. I happen to know that in certain sections of the country, certain of the sewers that have been accepted over in that district, in that county, would not have been accepted from any contractor, any regular contractor, anywhere down the line.

Now, what guarantee do we have if we tell the Park Service to issue a permit that the sewer line that is laid through here will not leak as badly as some of the other lines you have up in that county?

Mr. Coulter. I think you put your finger on it, sir, a joint inspection by people really determined to make the pipe watertight. You can make it watertight in that way.

Mr. Saylor. If the Washington Sanitary Sewer District were notified there would be no more money from the Federal Government until it began to clean up its own leakage, might this be one of the means of getting that into compliance with State regulations and Federal law?

Mr. Coulter. Well, it certainly would be effective if we made it both state and Federal money, because at the moment, because of conditions, the balance of money is coming from the State coffers, but actually, I do not think that we need to apply that kind of monetary force, and we are having sad experience with it in other parts of the State. We say, do it our way or we will not pay, we will not put up the grant, and they simply say, we are not going to do it. Then we go through the long hassle in the court and make them do it. But sometimes that takes years.

We have with the Washington Suburban Sanitary Commission a very fine working relationship. They have responded to the suggestions, the requests, the recommendations of the State Health Department when we have made it. I am sure that working on this problem, we shall make the same progress we have on other things.

Mr. Aspinall. Will the gentleman yield?

Mr. Saylor. I shall be happy to yield.

Mr. Aspinall. Will the authorities for the District and for the State of Maryland, and I suppose Virginia if it becomes interested in this, would they be willing to permit the engineers, the safety engineers for the Federal Government speaking through the Park Service or any agency working with the Park Service, to pass upon the installation an eighth of a mile outside of the park each way, as well as within the park?

Mr. Coulter. I am sure that can be worked out, certainly from the State side, and I do not believe that even Washington Suburban would object to that. We welcome all the help we can get in the State, including our good friends from the

Federal Government.

Mr. Aspinall. Of course, the gentleman from Pennsylvania has put his finger on it: we just do not want anything to happen to any sewage facility across the park that would destroy any of the national park values. But the only way we can be sure of it is not only the bond but the ultimate discretion or decisions as far as the overseeing engineers are concerned.

Mr. Saylor. Mr. Coulter, some of the people in this area, including these in the Washington Suburban Sanitary Commission. have said they would be willing to put up a bond if everybody else was required to put up a bond. Do you know of any other county or any other authority in your State of Maryland that is asking permission to go across a Federal Park of the National Park System?

Mr. Coulter. No,sir, I do not.

Mr. Saylor. Therefore, since this is an unusual situation, and since we are called upon to be responsible for those lands under the jurisdiction of the Federal Government, if we make certain requirements, we have justification for it, because it is an unusual circumstance. And up until now, the Washington Sanitary District has refused to go along with the proposition of putting up a bond.

Now, personally, if they are well-intentioned and they intend to put in this facility properly, then I see no reason why they should object. But if they intend to do things as haphazardly as reportedly have been done in certain other areas, then you can see the reason that we have to be overly careful.

One other thing, sir. There has been quite a great deal of fuss made about the septic tanks that are in Prince Georges County. Does your Department have charge of the installation of septic tanks and the inspection of them?

Mr. Coulter. Yes, sir. I am in charge of the State regulations that apply to the minimum requirements for septic tanks throughout the State.

Mr. Saylor. And testimony this morning was that about 10 percent of the citizens of the county use the present sewer facilities. I am not going to say that all the rest of them use the septic tank system, but has there been anything in your Department that has stopped installation of septic tanks in Prince Georges County?

Mr. Coulter. The directive stopping the installation of septic tanks came from the County Commissioners. We certainly concurred in that action and support them in it.

Mr. Saylor. And they stopped that because of what? Improper installation?

Mr. Coulter. Improper installation, practices that had grown up that were in violation of State regulations, really a moratorium to take a look at the practice and decide what should be done in the way of better regulations for Prince Georges County.

Mr. Saylor. As far as this proposed pipeline is concerned, it has nothing to do with the septic tanks or the stoppage of construction of any new septic tanks in the county; is that correct?

Mr. Coulter. No, sir, not entirely. The key to the orderly sewering of a large portion of Prince Georges County is in this sewage treatment plant. The continual delay and the discussions about where the effluent pipe is going to be, where the plant itself would be located, perhaps, has greatly retarded the development of the main collection facilities and the collectors that are needed to serve residences in the Piscataway and the Hanson Creek drainage area.

I think that it was because of not having the sewers and the pressures that people were under that some of the safeguards were let down on the septic tank installations, with the very bad conditions that did develop.

Mr. Saylor. Well, Mr. Coulter, as an old college debater, you have left yourself wide open.

Mr. Coulter. I understand that, sir.

Mr. Saylor. Here is a situation where your testimony says that the Piscataway plant is producing in April an effluent that is much better than the normal water that runs through the Potomac River, that its oxygen dissolved effluent was greater than the demand of the effluent itself. So that I see that it has absolutely nothing to do with whether or not the sewers are built, the interceptor csewers that are necessary, the change in the programming of the expanded areas that you have down there with nothing but septic tanks -- that is going to take several years to get installed.

If this effluent is half as good as you say it is, I see absolutely no reason in the world why they could not have been ahead with that, why you stopped the building of septic tanks in the District or at least in this section of the county. You cannot show any cause, where the cause of this sewer line has anything to do with the building of a normal septic tank.

Mr. Coulter. As you say, I have left myself wide open here, but the entire integrated sewage plan of Prince Georges County depends on the development of this sewage treatment plant, the one over in Western Branch ---

Mr. Saylor. And if they had complied with what your State law tells them they should -- that is, an integrated system, comprehensive water and sewage supply plan -- then they would be in a position to come in and say something in this. But by their own action, they have not complied with the State law, even though the Government gave them time to do it.

Mr. Coulter. Sir, they are complying with the State law. The State law is January. Their plan is under development. I think your point is well taken, though, because they are proceeding with more haste and urgency than they had before to complete that plan.

Mr. Saylor. Mr. Coulter, let me say that the long-range plan which you have projected for this area gives me some real hope for the development down in that section of Maryland. If you are able to withstand the political pressures of the so-called Free State of Maryland, which I understand from time to time has been extremely difficult for those in certain positions such as you occupy ---

Mr. Coulter. That means that everyone is free to take a crack at me.

Mr. Saylor. That is about what happens, and after you take so many cracks, you will find that a State such as California or Pennsylvania you will find a great deal more interesting to go to because people are a great deal more cooperative, because we have not the one-party system in those States.

Mr. Saylor (presiding). Answering the questions of the gentleman from Pennsylvania also will put you in condition to withstand those pressures.

The gentleman from California?

Mr. Johnson. I want to say, Mr. Coulter, you have been a very expert witness here. You certainly prepared yourself well prior to coming to this meeting, and I think you have given us a very fine understanding of the progress in this

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field that has taken place.

As I understand you, I understood you to say that you are going to upgrade these new facilities as you build them?

Mr. Coulter. Yes, sir.

Mr. Johnson. To give us the highest degree of treatment. Now, to your knoqledge, is the District making application for further Federal participation and State participation?

Mr. Coulter. Yes, sir, they have made the preliminary studies toward requesting a grant to increase the size of the grant.

Mr. Johnson. Well, in the State and Federal programs, they certainly would not build a plant where the collection system would take everything under the sun into the system. I presume that you do have some preliminary inspection upon the condition of the collection system prior to the approval of their applications.

Now, I think that is -- is that not a requirement in the Federal Statute?

Mr. Coulter. Well, it goes to the main facilities. It is a State requirement. We have State regulations that deal with the collection system and joint State and Federal requirements that apply to the major collector sewers, the big trunk sewers and interceptors.

Mr. Johnson. In this Piscataway area -- that is, the plant that will be built in this area -- you would not allow subdivisions unless you had built, you would not allow a subdivision to come in unless they hooked up to your Sanitary System?

Mr. Coulter. If there were a sewer system available?

Mr. Johnson. Well, as I understand it, you are going to increase this plant to take care of the needs of this particular area?

Mr. Coulter. Yes, sir.

Mr. Johnson. Now, a subdivider comes along and says, I would like to subdivide a piece of property. You certainly would make him sewer that property -- that is, the authorities would, prior to granting him the right to subdivide?

Mr. Coulter. I do not know whether to answer you as it is now or as it will be six months from now.

Mr. Johnson. I would like to say as you expand this plant, because we know what is there now. There are a lot of septic tanks that are in existence at the present time and a lot of probably inadequate sewer systems that will hook up to this plant eventually. But I imagine that you people are watching that very closely so that when you expand this plant, you are going to do it to take care of the sanitary problem that you face.

Mr. Coulter. Yes, sir.

Mr. Johnson. Now, do you have enough area zoned by the District to perfect this plant to meet the needs of the

District that you talk about?

Mr. Coulter. Yes, sir.

Mr. Johnson. Now, let us get to the pipeline.

What kind of a pipeline are you going to run from the plant to the 1200-foot outlet in the river? How deep is it going to be? Are you going to have any service outlets in the line?

Where is your last service point prior to the time it hits park property? How far underground are you going to put this? What are you going to do with park lands as far as permanent maintenance is concerned? What access do you have there?

Mr. Coulter. Sir, I believe all of those things will be stipulated by the Park Service in their agreement with Washington Suburban to have access to the land.

From the State standpoint, if this is the route that is selected, we will review the plans and the construction drawings to make sure that the sewer is properly built on the proper grade, with the proper material, and that it is watertight. We would strongly urge and perhaps would even insist that there not be manholes or any other kind of opening to the ground surface that is subject to vandalism or any of this kind of damage in the park area where it is used publicly.

But I think principally, the points that you raise would be negotiated between Washington Suburban, the owner, and the

Park Service.

Mr. Johnson. What amount of pressure do you have to put on it to get to the river, on the outflow? Is there any substantial pressure on that that you would have to pump it into the river?

Mr. Coulter. Mr. Ritter informs me that it would flow by gravity, and it is my understanding that there is an available head of about 50 feet to move the material by gravity.

Mr. Saylor. Would the gentleman yield?

Mr. Johnson. Yes.

Mr. Saylor. With 50-foot pressure and not too deep channels in that area, might we not have a new fountain come into existence just off the shores of the national park? I do not know. It might be a very interesting thing.

Mr. Coulter. The plant, of course, would have to be built to take those pressures. But those pressures would not develop for very many years, until the 54-inch pipe was actually full. Most of the time, it would be running half full or just free gravity flow.

Mr. Johnson. Now, your request will be for one 54-inch line from the plant to the river.

Mr. Coulter. In the discussions that I have been in, only one line has been mentioned, but the discussions did center around a line large enough to handle the full 13 million gallon expansion.

Mr. Johnson. That is all.

Mr. Taylor. We were doing a little figuring earlier. First, we were told the line will be 48 inches in diameter; not it is 54 inches. Just in quick figuring, we thought it was an increase of about 20 percent in volume. Is that about right?

Mr. Coulter. Yes.

Mr. Saylor. Mr. Coulter, if the pipeline is built that empties the effluent into the river, what assurance is there that the effluents will not get back into the mixing bowl,as you call it, of Piscataway Bay and affect the natural qualities of that bay?

Mr. Coulter. I think it is pretty sure that some of the effluent will come into the bay. I think straight statistical figuring, some of the offshore water does move into that bay now.

Mr. Saylor. Then you are charged with the health of the State. If this Piscataway Bay is a natural mixing bowl, why does the State of Maryland Health Department permit the effluent to be emptied into Piscataway Bay now?

Mr. Coulter. For two reasons: first of all, the sewage treatment plant was built and there is no other place to run the effluent.

Mr. Saylor. But there was another way. They could have built a pipeline. There are at least three places that they could have built a pipeline. Before this plant started to operate, you could have required them to build it. But you did not.

Mr. Coulter. Sir, before the grant offer was made, we thought we had firm assurances that there would be a pipeline going from the plant across the park land to the Potomac. Had we not had those assurances, believe me, a grant would not have been made, even though this predates me. I know that the Federal Government would not have offered a grant for a sewage treatment plant with no place to put the stuff after it was treated.

Now, the determination to put it into Piscataway Bay, which was a temporary decision, was made after an evaluation of the possible effects on the Bay as far as resources were concerned --- that is, the water quality standards --- and after a determination of judgment of what the bacterialogical quality would be andwhat kind of health hazards might develop, on both counts, it was determined that the effluent from five million gallons first and then eight million gallons could go into the Bay without violating the water quality standards.

Second of all, the bacterial count of the effluent properly chlorinated would be down at the level which would register it safe from the health standpoint.

Mr. Saylor. What causes the unpleasant odor down there at Piscataway Bay at the present time?

Mr. Coulter. I think initially, during this time and perhaps last year, it was the improper operation of the sewage treatment plant. At the present time, I do not know. Our people have not picked up odors when they have been down there and they have been down in response to odor complaints. However, I am informed that on April 30, one of the Federal people was there making an inspection, and he picked up a very strong odor.

At the present time, it is something that we are trying to find out. It just is inconceivable that an effluent of the purity as reported in these results and from the samples picked up by our people and from the Federal people would cause an intensive odor or any odor at all. But I cannot argue with the observation that the odor is there, so we are trying to find out what it is.

Mr. Saylor. I might say to you, Mr. Coulter, that if I were in your position, I would never begin to examine the operation of the plant to determine whether or not the figures that were being furnished to me were correct. Because if the effluent is 92 percent removed, there is no reason for the odor that was there last summer, there is no reason for the odor that was there this spring.

Mr. Coulter. Of course, sir, that has not occurred to us. The Washington Suburban Sanitary Commission has hired an engineering firm that we think very highly of. I do not think they can be corrupted in any way. They have an engineer that is assigned to the plant. He goes down there once a week and works with it.

In addition to that, we asked the Washington Suburban Sanitary Commission to greatly increase the staff and the competence there. They brought in a very highly competent operator, a man I trust, and again, talking and working with him, I have no reason to believe he is telling me anything but the truth.

They actually are using that plant to train operators who will move over to the Weston Branch Plant, which is not in the Potomac, it is over on the Patuxent, but it will be in operation very shortly.

So, from the State standpoint, we are quite pleased with the response after last spring that we got from the Washington Suburban Sanitary Commission and from the effort that they are making now to operate the plant properly, even to the extent of bringing in outside consultants to look over their shoulder and make sure they are doing things right.

Mr. Saylor. I say to you I was only at the plant on one occasion and I found nothing to complain about in the way they were operating the plant, other than the fact that when a few Congressmen descended upon them, if they were to have a heart attack, I would not be surprised. I do not think they would expect that we would come down without any warning whatsoever.

That is all.

Mr. Taylor. Thank you, Mr. Coulter.

Our next witness is Mr. George B. Hartzog, Jr., Director of the National Park Service, Department of the Interior, accompanied by Nash Castro and Eugene Jensen.

STATEMENT OF GEORGE B. HARTZOG, JR., DIRECTOR, NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY NASH CASTRO, DIRECTOR, NATIONAL CAPITAL REGION, NATIONAL PARK SERVICE; AND EUGENE JENSEN, REGIONAL DIRECTOR, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION; BERNARD R. MEYER, ASSOCIATE SOLICITOR FOR PARKS AND RECREATION.

Mr. Hartzog. Mr. Chairman, we are delighted to appear to answer any questions the Committee may have. We do not have a prepared statement.

I have a map showing the general location of the matter under consideration and I would be happy to brief you.

Mr. Taylor. Proceed.

Mr. Hartzog. The location of the Washington Suburban Sanitary Commission Plant is in this vicinity (indicating). The present outfall goes into Piscataway Creek along this dotted yellow line. The proposal is to build the effluent line. At this point, it would enter Piscataway Park, through

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF SANITARY ENGINEERING

ADDRESS REPLY TO
DIRECTOR OF SANITARY ENGINEERING
PRESIDENTIAL BUILDING
415 - 12TH STREET, N. W.
WASHINGTON, D. C. 20004

December 23, 1969

Mr. Murray Stein, Assistant Commissioner
for Enforcement
Federal Water Pollution Control Administration
Department of the Interior
Washington, D. C. 20240

Dear Mr. Stein:

At the time of the progress meeting on the Potomac River in the Washington Metropolitan Area, several questions were asked which required additional work before answers could be provided. We regret that the press of other matters has resulted in a delay in providing you with these answers, but we presume that the interest still exists. The questions asked were as follows:

1. What is the District's sewer service rate now and what would be the effect of different levels of treatment?

Answer The current average annual sewer service charge is $22.24. The provision of secondary treatment, estimated to cost $108 million would cause this average to rise to $44.48. The provision of treatment to the levels contemplated in the Enforcement Conference recommendations (96% removal suspended solids, BOD, phosphorous, and nitrogen) would cause the average annual sewer service charge to increase to $74.12. These calculations are based upon the assumption that the suburban jurisdictions would assume responsibility for 50% of the total cost (their proportion of the flow) and that Federal grants would remain at present levels.

2. In view of the space problem at Blue Plains and the flows contemplated in the WSSD ten year program, how does the District plan to cope with these projected flows?

Answer The nature of the question implied that we had overlooked some factor in our planning and as a result the review of the WSSD Report was repeated to reassure ourselves on this matter. This revealed that the Washington Suburban Sanitary Commission estimates the total 1980 sanitary sewerage design flows to the District of Columbia's Water Pollution Control Plant to be 166 mgd (annual average) with a peak rate of 352 mgd. This is in general agreement with the Maryland flows estimated by Metcalf & Eddy in their February 1969 development plan for the District's plant. Their estimates were 156 mgd (annual average) and a peak rate of 331 mgd. This is within the assumed range of accuracy for estimates.

3. In view of the cost of tunnels for stormwater, could the problem be solved with rubber bags? How many would it take?

Answer A fifteen year frequency storm produces about 4 billion gallons of runoff in the District of Columbia. Assuming a bag capacity of 100,000 gallons each, 40,000 bags would be required.

4. What size storm creates a flow of five times dry weather?

Answer Approximately 0.2 inch rainfall can produce these flows. It must be recognized, however, that this particular question cannot be answered precisely since the intensity of precipitation plays a major role. A 0.2 inch rainfall can be expected to occur 45 times per average rainfall year, producing 240 hours of runoff time.

5. What percent of the flow at Blue Plains comes from Federal installations on your system?

Answer The Federal contribution is about 23 million gallons per day in a total of 240 million gallons per day or about 9%.

I hope that these answers will permit the completion of the record for the recent conference.

Sincerely yours,

Paul V. Freese

for NORMAN E. JACKSON, P. E.
Director of Sanitary Engineering

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